BY ORDER OF THE
SECRETARY OF THE AIR FORCE

AIR FORCE INSTRUCTION 91-204
1 DECEMBER 1996

Safety

SAFETY INVESTIGATIONS AND REPORTS

COMPLIANCE WITH AIR FORCE INSTRUCTIONS IS MANDATORY

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This instruction gives procedures for investigating and reporting all US Air Force mishaps and exchanging F-16 mishap information with European Participating Air Forces (EPAF). It implements Air Force Policy Directive (AFPD) 91-2, *Safety Programs*. It applies to commanders, managers, supervisors, and safety staffs at all levels, all persons who investigate and report Air Force mishaps, and those persons who handle such reports. This instruction provides guidance regarding the control and use of privileged safety reports. Failure to observe the prohibitions and mandatory provisions of this instruction in paragraphs 1.12.1.4 and 1.12.1.5 by military personnel may be a violation of Article 92, *Uniform Code of Military Justice* (UCMJ). Selected paragraphs may not apply to ARC forces. This regulation implements NATO Standardization Agreements (STANAGs) 3101, *Exchange of Accident/Incident Information concerning Aircraft and Missiles;* 3102, *Flight Safety Cooperation;* 3531, *Safety investigation and Reporting of Accident/Incidents Involving Military Aircraft and/or Missiles;* and 3750, *Reporting and Investigation of Airmiss Incidents.* Violations by civilian employees may result in administrative disciplinary action without regard to otherwise applicable criminal or civil sanctions for violations of related laws.

Send major command (MAJCOM) supplements to HQ USAF/SE, 9700 G Avenue SE, Suite 240, Kirtland AFB NM 87117-5670, for approval before publication. See attachment 1 for a Glossary of References, Abbreviations, Acronyms, and Terms.

SUMMARY OF CHANGES

★Figures and Tables have been updated through out the document. Chapter 1 clarifies Air Reserve Component installation requirements in response to mishaps as well as requiring a smooth transition between the On-scene Commander and the Safety Investigation Board (SIB) President. Paragraph 1.2.6. requires the availability of a contracting officer from the nearest military installation to assist the SIB. Paragraph 1.3 outlines the accountability and responsibility of all mishaps based on ownership. Paragraph 1.8 outlines the responsibilities for mishap investigation of other nation's military mishaps. Paragraph 1.13.1.1 adds life science material to the list of privileged materials. Paragraph 1.15 discusses the handling on disclosure of ground and explosive safety reports. Chapter 2 shows changes in the civilian personnel injuries reporting requirements as well as the requirement to show the work unit code for single item failures. Clarifies the Class D reporting requirements. Clarified the damage cost computations method situations. Figure 2.1 has been updated. Chapter 3 establishes new contract review requirements. Defines the investigation officer qualifications for FOD and Miscellaneous Air Operations mishaps as well as the SIB President's qualifications. Changes the all references of "voting" to "primary" and "investigating commander' to "convening authority". Adds a new flight mishap category "Flight-unmanned vehicles" for UAV and unmanned RPV mishaps. Moves the commander's representative to an additional nonprimary member for all boards. Updates the disposal of evidence and other board generated materials. Authorizes the AFSC representative to directly process the SIB's technical support requests. Changes and outlines the contractors/technical specialists guarantee of privilege in the investigation. Directs the review of any pre-existing hazards and risks within the mishap sequence. Creates two new categories covering other findings and recommendations of significance. Incorporates life science findings

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into the normal sequence of events. Chapter 4 deletes the requirement for the AF Form 740, **Ground Mishap and Safety Education Summary,** (RCS: HAF SE(O)7113). Chapter 5 changes the hard copy formal report assembling instructions. It also limits the usage of the promise of confidentiality. Delineates the role of the minority opinion and outlines the submission process. Provides new witness statements, both privileged and non-privileged. Chapter 6 has been completely rewritten to get it in line with the recommendations of the Blue Ribbon Panel on Aviation Safety and with the current procedures at the Air Force Safety Center. This chapter now applies to all safety disciplines. Chapter 7 incorporates UAV and Full-scale unmanned RPV into the Flight-unmanned vehicle category and outlines the reporting instructions for this new category. Incorporates the BASH reporting requirements from AFI 91-202, *The Air Force Mishap Prevention Program,* and completion of the AF Form 853. Chapter 8 transfers all full-scale RPV reporting requirements to Chapter 7, subscale stays in this chapter. It also eliminates the capabilities for combined safety reports and deficiency reports. Chapter 9 has several major changes, starting with the definition of Space (Ground Involvement) mishaps . Authorizes alternate reporting for orbital mishaps. Requires the reporting of loss or damage resulting during commercially procured launch systems. Chapter 11 clarifies the reporting requirements for Class A or B Ground (aircraft involvement) mishaps. Explains the reporting requirements for vehicle mishaps. Provides for an abbreviated CMR message replacing the AF 1057 requirements. Chapter 12 was completely rewritten based on the findings and recommendations of the Nuclear Weapons reporting Process Action Team. Report formats and addressing have been changes and updated. Chapter 13 outlines the narrative requirement for Life Science Reports. Chapter 14 clarifies the reporting for FOD damage when the damage is confined to the engine. Chapter 15 is rewritten to a line this document with AFI 34-217, *Air Force Aero Club Program,* clarifying the reporting requirements for Aeroclub reporting. It also clarifies the reporting requirements for a fatality on foreign and commercial aircraft. Attachment 1 definitions are added for Air Force at Large and Unmanned Aerial Vehicles. Attachment 2 adds the codes and definitions for the life science sections of the reports. A ★ indicates revision from previous edition.

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PART 1

ALL MISHAP INVESTIGATIONS

Chapter 1

RESPONSIBILITIES AND ADMINISTRATION

1.1. Procedural Guidance:

1.1.1. **Investigating.** Conduct safety investigations only to find causes of mishaps in order to take preventive actions. See chapter 3 for specific instructions.

1.1.2. **Reporting.** Chapters 4 and 5 contain general instructions on mishap reporting. Chapters 7 through 15 contain specific reporting instructions by safety discipline and mishap type.

1.1.3. **Following Up.** Chapter 6 contains instructions on follow-up actions.

1.2. Responsibilities for Air Force Safety Investigation and Reporting:

1.2.1. **The Air Force Chief of Safety (HQ USAF/SE).** The Chief of Safety establishes Air Force policy for safety investigation and reporting in AFPD 91-2. In addition, the Chief of Safety has the following specific authority and responsibilities:

1.2.1.1. Manages or coordinates on all interservice, interagency, international, and government-industry issues related to the safety, occupational health, and environmental security of United States Air Force personnel and materiel.

1.2.1.2. May relieve commands of investigation responsibilities and convene an Air Force-level safety investigation board (SIB) (advising the investigating MAJCOM's safety staff of such action within 6 hours after receiving the preliminary safety message report, and confirming the action by message to all interested agencies within 24 hours).

1.2.1.3. Determines the final category, class, and cause factors for each Air Force mishap. For formal reports, prepares a memorandum of final evaluation (MOFE) (see Chapter 6).

1.2.1.4. Authorizes dissemination of Air Force mishap information to other services, including Coast Guard, to enhance their mishap prevention efforts.

1.2.1.5. Coordinates with the Director of Professional Affairs and Quality Assurance, Office of the Air Force Surgeon General (AFMOA/SGP) on matters associated with the investigation and reporting of occupational illness.

1.2.2. **The Air Force Safety Center (HQ AFSC).** The Air Force Safety Center, which consists of the Chief of Safety's immediate staff and field operating agency functions, executes the Air Force safety investigation and reporting program by:

1.2.2.1. Administering the requirements of this instruction.

1.2.2.2. Ensuring each mishap is properly investigated and reported.

1.2.2.3. Participating in investigations by sending representatives and technical advisors.

1.2.2.4. Determining types of investigations and reports required for all types of mishaps.

1.2.2.5. Developing investigative and reporting procedures and forms.

★1.2.2.6. Reviewing all safety reports and endorsements, making comments and additional recommendations as appropriate. This includes issuing the memorandum of final evaluation.

1.2.2.7. Maintaining records of each Air Force safety report.

★1.2.2.8. Preparing and maintaining the MOFE on all formal reports.

1.2.2.9. Preparing studies and statistical data for use in mishap prevention.

1.2.2.10. Analyzing mishap data, developing preventive actions, identifying action agencies, and forwarding recommendations for action.
1.2.2.11. Tracking the status of Class A and B (and formal Class C mishaps or HAP events, if endorsed) safety report recommendations to ensure corrective actions are completed prior to recommendation close-out.
1.2.2.12. Tasking other Air Force agencies for special reports as required.
1.2.2.13. Forwarding required reports on Air Force mishaps to the Department of Defense (DoD) and the Department of Labor (DOL).
1.2.2.14. Forwarding required reports on Air Force mishaps to the other services including Coast Guard when appropriate.
1.2.3. **MAJCOM Commanders**:
★1.2.3.1. The MAJCOM commander of the organization accountable for the mishap is responsible for its investigation unless relieved of this responsibility by HQ USAF/SE. Paragraph 1.4 determines who is the convening authority for each class of mishap.
1.2.3.2. Ensure compliance with AFPD 36-27, *Social Actions*; Air Force Instruction (AFI) 44-102, *Professional Procedures*; AFI 44-120, *Drug Abuse Testing Program*; AFI 48-125, *USAF Personnel Dosimetry Program*; *The Air Force Civilian Drug Testing Plan*, and other appropriate directives for toxicological (TOX) testing, including blood alcohol count (BAC) of individuals following mishaps.
1.2.3.3. Validate causes, corrective actions taken, and recommendations in mishap reports. For Class A aircraft, space, and missile mishaps and nuclear accidents, validation is accomplished upon acceptance of the board or single investigating officer's report, with or without comments.
1.2.4. **Air Force Materiel Command (AFMC):**
1.2.4.1. Provides technical assistance to Air Force SIBs.
1.2.4.2. Reviews mishap reports, ensures system program directors (SPD) review MOFEs, and enters corrective actions taken through the materiel safety data base (DB 10) for tracking.
1.2.4.3. Notifies Field Command, Defense Special Weapons Agency (DSWA), Kirtland AFB NM 87117, if nuclear weapon mishaps require design agency evaluation.
★1.2.4.4. Maintains TO 1-1-638, *Repair and disposal of Aerospace Vehicles*, for aircraft repair data.
1.2.4.5. Maintains list of technical assistance provided by system program directors/managers.
★1.2.5. **The commander of the Air Force base nearest to a mishap**: The DoD is responsible for major accidents involving DoD materiel or resulting from DoD activities. The installation nearest the scene of a major accident involving DoD resources responds to the accident.
★*NOTE*: ARC installations respond with available resources to the maximum extent possible. In some mishap situations ARC commanders may form an interim SIB and provide resources for mishap response if proximity to the mishap site, distance from the nearest active duty Air Force Base, or weapons system expertise make those options more practical. If required, ARC units should coordinate these issues with the nearest appropriate Air Force Base commander. ARC units are responsible for ensuring local agreements are in place to assure the following:
★1.2.5.1. Provides emergency medical care, mortuary services, and action to minimize injury and damage, including:

- Fire fighting, rescue, medical support, other disaster control activities including limiting the exposures to bioenvironmental hazardous materials.
- Assisting rescue activities and investigators from other governmental agencies working on the scene, such as local law enforcement personnel.
- Providing a mortuary officer with a search and recovery team to search for and recover human remains.

1.2.5.2. Forms an interim SIB to protect and preserve vital evidence pending the arrival of the formal SIB, to include:

- Photographing the site and wreckage, to include photographing and recording the position of fatalities and human remains.
- Taking fluid and gaseous (e.g., oxygen) samples.
- Obtaining witness statements.
- Preserving any other related perishable evidence. See paragraph 3.7.4 for handling of electronic storage devices.

★1.2.5.2.1. Mishap Site Responsibilities:

- Legal responsibility for the site always resides with the designated On-Scene Commander (OSC), from the time of the accident until all restoration actions are complete; transfer of responsibility for the site will only be accomplished between individuals who have been trained in accordance with federal regulations.
- Access to site will be granted to properly designated Safety Investigation Board (SIB) and Accident Investigation Board (AIB) personnel once the scene has been declared safe by the OSC.

- The OSC and Disaster Control Group (DCG) will provide a briefing on all known hazards and personal protective equipment (PPE) requirements prior to passing control of the site to the SIB or AIB President.

- OSCs must ensure SIB and AIB personnel are suitably trained and equipped to enter any site where hazardous materials (including biohazards posed by blood-borne pathogens) may pose a threat to their safety. Site authority may be delegated to the SIB/AIB presidents by the OSC when the site is considered safe.
- Custody of wreckage and other physical evidence may be transferred to the SIB president at the OSC's discretion.
- Supporting installation DCG assets needed for follow-on investigative support must be requested through the OSC.

★1.2.5.3. Ensure TOX testing is promptly accomplished for military members and civilian employees in accordance with AFPD 36-27, *Social Actions* and *The Air Force Civilian Drug Testing Plan*; or other appropriate directives after consulting with the servicing staff judge advocate and the personnel staff.

- For Class A and B flight, flight-related, flight-unmanned vehicle, and all aircraft-involved mishaps test flight crews and for Class A, B, and C mishaps test individuals whose actions or inaction, in the commander's judgment, may have been factors in the mishap sequence.
- DoD Civilian testing is limited to only those employees for whom there is evidence they may have caused the mishap. DoD Civilian testing is mandatory for all civilians involved in a Class A or B aircraft-involved mishap.
- Contractor employees whose actions or inaction, in the commander's judgment, may have been a factor in the mishap sequence may not be compelled to provide a sample for TOX testing unless they consent, or are required to do so under the provision of the contract.
- For aircraft physiological mishaps, test those individuals exhibiting physiological symptoms as specified in chapter 7.

NOTE: Ensure the medical facility conducting the testing follows chain of custody and other procedures in AFI 44-120. Forward the samples to the Armed Forces Institute of Pathology (AFIP) by the fastest means. AFIP returns test results to the originating medical facility or drug and alcohol abuse control officer (DAACO), who provides copies of those results to the SIB or investigating officer as directed by AFPD 36-27. Follow up with the medical facility or DAACO to ensure results are received.

★1.2.5.4. Ensures personnel take the following actions:

- Inform the public affairs officer (PA) of non-privileged information (paragraph 1.15.4). Release safety information only as authorized by this instruction.
- Forward an OPREP-3 (Operational Report) if required by AFMAN 10-206. See paragraph 4.2 (and chapter 12 if applicable) for details.
- Send a preliminary message report as required by tables 4.1, 4.2, 12.1, 12.2, 12.3, 12.4, 12.5, or 12.6.
- Notify the home base commander of all casualties and ensuring those casualties are reported as outlined in AFI 36-3002, Casualty Services.
- Notify the departure and destination bases for aircraft mishaps (or the departure base for missile mishaps) and the commander of the unit that had the mishap.
- Notify appropriate medical or law enforcement authorities as soon as possible in case of non-Air Force injury or property damage.
- Notify the home base of the persons involved in a United States Army (USA), United States Navy (USN), United States Coast Guard (USCG), or Civil Air Patrol (CAP) mishap or, if the home base is unknown, the nearest base of the service.
- Notify the National Transportation Safety Board (NTSB) and comply with AFJI 91-206, *Participation in a Military or Civil Aircraft Accident Safety Investigation* (formerly AFR 127-11), when a mishap involves civil aircraft. All NTSB notifications are made to the regional offices, see AFJI 91-206 for phone numbers and addresses.
- Notify the Federal Aviation Administration (FAA) according to AFJI 91-206 when a mishap involves FAA services or facilities, except licensed commercial space systems. Aviation mishap notifications are made to the FAA regional offices, see AFJI 91-206 for phone numbers and addresses. For commercial space systems, notify the Combined Operations Center (202) 863-5100.
- Notify the Military Traffic Management Command at MTSS-S, 5611 Columbia Pike, Falls Church VA 22041-5050, or by phone, (703) 681-6951 or DSN 761-6951, when a mishap involves explosives or other dangerous articles being transported or handled by a commercial motor or rail carrier under Department of Transportation (DOT) regulations.
- Notify FAA/AST if licensed commercial space systems involved in the mishap (e.g., commercial launch damages government property, inadvertently destroyed by AF, commercial booster carrying AF payload, etc.). All FAA/AST

notifications are made to the FAA Combined Operations Center, (202) 863-5100, FAA/AST, 400 7th Street, SW, Room 5402A, Washington DC 20590.

- Notify the nearest Occupational Safety and Health Administration (OSHA) regional or area administrator within 8 hours when a mishap involves fatal occupational injuries or illness to an Air Force or non-Air Force civilian; or injuries and illness that require in-patient hospitalization of three or more Air Force or non-Air Force civilians.
- Notify federal and state EPA officials of environmental hazards associated with the mishap.

★1.2.6. **The nearest Air Force base to a mishap:** The nearest Air Force base to a mishap site will be designated as the host installation for the investigation. It will provide services and aid to the investigators, to include clerical help and other personnel as required; office space with secure storage capability; communications; food and water; transportation; shelters; specialized clothing; and medical backup for the field portion of the investigation and a contracting officer to assist the SIB in any additional locally procured items. Follow funding instructions in paragraph 3.3.

1.3. Assigning Mishap Accountability and Using Statistics. The Air Force records mishap losses and assigns accountability for each mishap to the command (MAJCOM, ANG, or AFRES) that experienced the loss or to the Air Force at large, when applicable. Flight mishaps are normally assigned to the organization credited with the aircraft's flying hours at the time of the event (paragraph 7.2).

1.3.1. When a mishap involves two or more MAJCOMs, HQ USAF/SE assigns accountability differently from this guidance only if a memorandum of agreement providing alternative accountability procedures has been coordinated with HQ USAF/SE. When a mishap involves Air Force personnel or equipment and those of another DoD component, the appropriate service Chiefs of Safety determine accountability.

1.3.2. HQ AFSC converts flight and ground mishap totals into statistical rates. These rates consider exposure to loss as well as the number of losses. Mishap statistics are not evidence of an organization's efficiency; they merely show the unit and command possessing the equipment. In ground mishaps, they show the command experiencing the assigned personnel loss.

★1.3.3. **Mishap Accountability of Areas of Responsibility (AOR).** Ownership is the basic principle governing the mishap accountability in AORs. The command owning the asset involved in the mishap or to which an involved individual is assigned is charged with the mishap. Flight mishaps are normally assigned to the organization credited with the aircraft's flying hours at the time of the event (paragraph 7.2). Accountability in mishaps with multi-command involvement will be handled in accordance with paragraph 1.3.1.

★1.4. Determining Who Investigates:

★1.4.1. **MAJCOM Commander.** The MAJCOM commander of the organization accountable for the mishap is responsible for its investigation unless relieved of this responsibility by HQ USAF/SE. Paragraph 1.6 describes special considerations for investigating ARC mishaps. The responsible MAJCOM commander may direct a deviation from paragraph 1.4.2 to ensure a full and professional investigation. Sometimes the location of a mishap may prevent the responsible commander from conducting a prompt investigation. When this happens, the responsible commander may coordinate with another MAJCOM commander to appoint a convening authority nearer the scene. Advise HQ USAF/SE if this occurs.

★1.4.2. **Convening Authority.** This is the commander who appoints the board or single investigating officer.

1.4.2.1. For all on-duty Class A and nuclear mishaps, the MAJCOM commander is the convening authority. He may not delegate this authority to a subordinate commander.

1.4.2.2. For all on-duty Class B and below mishaps, HAPs, HATRs, and nuclear incidents and deficiencies these responsibilities may be delegated to the appropriate level of command, for example Class B to NAF/CCs while Class C and below to the appropriate Wing/CC.

1.4.2.3. For off-duty mishaps, ground and miscellaneous air operations mishaps, the convening authority is the commander of the nearest installation with a full-time safety manager, unless the accountable MAJCOM commander decides to assume investigative responsibility.

★1.4.3. **Convening Authority Special Considerations:**

1.4.3.1. When ANG and AFRES mishaps are investigated by formal boards, the boards are convened by the gaining MAJCOM. The gaining MAJCOM delegates investigating authority to NGB/CF for all ANG Class B, C, and HAP mishaps that occur within their organization. When NGB/CF directs the investigation to be accomplished by personnel outside the local unit, resources, workdays, and TDY funds will be provided by the National Guard Bureau. EXCEPTION: AFRES/CC and NGB/CF may enter into memoranda of agreement with gaining MAJCOMs authorizing them to act as convening authority at the discretion of the ARC component. Terms and conditions of such agreements require approval by HQ USAF/SE. Boards and/or single investigating officers may only be appointed by NGB/CF or AFRES/CC if an approved agreement is in effect prior to the date of the mishap to be investigated.

1.4.3.2. The MAJCOM commander accountable for the aircraft, space system, explosives, or missile determines the convening authority when operators from different MAJCOMs are involved. If aircraft, space system, or missiles of two or more MAJCOMs are involved, HQ USAF/SE determines the convening authority investigating MAJCOM commander.
1.4.3.3. If a mishap involves government-furnished or loaned aircraft or missiles, or new production aircraft or missiles (accepted by the Air Force but not yet delivered), the commander of the command negotiating the loan or contract is the convening authority unless otherwise specified in the loan or contract documents. In cases where loan or contract agreements specify investigative jurisdiction, follow the terms of such agreements. In no case will a non-AF agency have mishap investigation jurisdiction.
1.4.3.4. If a mishap involves a non-AF operator, the organization to which the involved equipment is assigned is the convening authority.
1.4.3.5. Host and tenant commanders determine investigative responsibility for tenant ground and explosives mishaps. In instances where the convening authority is not the accountable commander, provide a courtesy report to the accountable commander within the time restrictions in table 4.1. See paragraphs 1.2.2.4 and 1.4.1.
1.4.3.6. See chapters 14 and 15 for foreign object damage (FOD) and miscellaneous air operations mishaps, respectively.
1.4.4. **The convening authority:**
1.4.4.1. Decides whether to use a SIB or single investigator.
1.4.4.2. Request support from the Air Force Safety Center for all SIB investigated mishaps and as determined for single investigator mishaps.
1.4.4.3. Ensures required reports are sent.
1.4.4.4. Ensures all mishap factors are investigated and requests technical assistance as required. ***NOTE:*** Seek the advice of the staff judge advocate on all legal questions.
1.4.4.5. Reviews the safety report to ensure it meets the requirements of the Air Force mishap prevention program. ***NOTE:*** Only the SIB (or investigating officer) changes the report being submitted to AFSC.
1.4.4.6. Forwards the formal safety report as required. If more information is found after the formal report has been submitted, send this information to the same addressees who received the formal report. This includes forwarding the names of persons whose later deaths were the result of the mishap.
1.4.4.7. Takes or recommends corrective actions to prevent recurrence of the mishap.
1.4.4.8. Authorizes the release of information to news media, relatives, and other agencies as stated in this chapter.

1.5. Investigating ARC Mishaps. Convening authority may appoint Air Force reservists and Air National Guardsmen to SIBs in technician or military status with the concurrence of HQ AFRES or the National Guard Bureau, respectively. Appointing orders normally cite Title 10, United States Code, section 672(d), as authority. Ensure SIB duties do not create a conflict of interest with the individual's civilian occupation or interests. AFRES/SE can be contacted at DSN 497-1871 and ANGRC/SE can be contacted at 278-8524.

★1.6. Investigating Mishaps Involving Multiple Services. For mishaps involving multiple services or joint operations . . . ***Note:*** Investigating Commander should be the commander that sustains the greatest loss or is the most directly involved.

1.7. Investigating Mishaps Involving NATO Aircraft, Explosives, Missiles, Space Vehicles, or Personnel. Comply with North Atlantic Treaty Organization Standards of Agreement (NATO STANAG) 3102, *Flight Safety Cooperation*, 3531, *Safety Investigation and Reporting of Accident/Incidents Involving Military Aircraft and/or Missiles*, and NATO Air Standard 85/2A, *Investigation of Aircraft/Missile Accidents/Incidents*. Investigate and report mishaps involving Air Force aircraft, space vehicles, or missiles according to this instruction. The investigation required under STANAG 3531 is in addition to, and conducted separately from, the investigation required by this instruction.

★1.8. Investigating Mishap Involving Other Military Aircraft, Explosives, Missile, Space, Vehicles, or Personnel in Continental United States (CONUS). For mishaps involving non-US equipment or personnel in the CONUS, the mishap will be investigated using the provisions of this document, established memorandum of agreements (MOA), and STANAG 3531. It is desirable to conduct only one safety investigation which has the full support and participation of all involved nations. However, separate investigations are authorized if due to law, agreement, or procedure, the involved nations have policies that may vary as follows:

- Some nations may permit the use of safety investigation results for disciplinary actions, claims, litigation, or for other administrative actions or purposes.
- Some nations may consider safety results as privileged information to be used solely for accident/incident prevention purpose.

- Some nations may require that their national civil authorities conduct the safety investigation of all accidents/incidents involving civil aircraft. In the case of an accident/incident involving civil aircraft and military aircraft, the US military authorities shall ensure the operating nation is invited to participate in the national safety investigation.
- Some nations may require that separate safety investigations of accidents/incidents involving civil aircraft and military aircraft by military authorities. In this case the US military authorities shall ensure the operating nation is invited to participate in the national civil investigation. The military safety investigation will be conducted in accordance with the provisions of this document and any established MOAs.

1.8.1. When a foreign nation operates from an US airfield or launch site, that nation's military authorities shall be responsible for all measures to be taken in the event of an accident or incident which involves only their aircraft or missiles and which occurs within the limits of such airfield or launch site. The occupying nation's military will provide an english translated version of the mishap report to the host base safety office.

1.8.2. When a Joint Safety Investigating Committee is established the president of the committee shall be the designated senior member of the operating nation's investigating group. The president may accept any evidence considered relevant to the investigation, whether oral or written and whether or not it would be admissible in a civil court. The committee will accept expert opinion on evidence of any type, whether sworn or unsworn. No person, who in the line of duty may be deemed to be directly associated with the cause factor(s) of the accident or who may have personal interest in the outcome of the investigation, may participate as a member, observer, or advisor to the committee.

1.8.3. Upon notification of a mishap, both nations will immediately ensure all parties involved have been notified and claim their intentions concerning participation in the safety investigation. They will also provide the names of their investigating group and the designated senior member of the group as soon as possible.

1.8.4. All reporting will be in accordance with this document and STANAG 3531.

1.8.5. In the event of conflicts between this document, existing MOAs, and STANAG 3531, the STANAG 3531 will be final course of determination.

1.9. Investigating Mishaps Involving Nonaccepted Air Force Aerospace Vehicles or Vehicles Leased to Non-Air Force Agencies. (***NOTE:*** Nonaccepted Air Force aerospace vehicles include aircraft, remotely piloted vehicles (RPV), unmanned aerial vehicles (UAV), missiles, and space vehicles.) The MAJCOM commander who negotiates a contract or agreement for the vehicle lease or manufacture is the convening authority. Aircraft leased to other than US agencies (lessee does not assume risk of loss) for demonstration purposes or under the operational control of the Defense Logistics Agency (DLA) for contract administration purposes are accountable to the Air Force at large. Mishaps involving these aircraft are not recorded to any command while the aircraft are in the possession of the agency or DLA. The possessing command is still responsible for mishap investigation and reporting. Normally, AFMC negotiates all aircraft and engine leases. If another agency negotiates a lease, the agency and AFMC shall determine who the convening authority will be prior to executing the lease. The negotiating commander ensures the terms of the contract or agreement state:

1.9.1. The Air Force is responsible for the investigation of mishaps involving aircraft.

1.9.2. The Air Force is authorized to investigate mishaps involving other nonaccepted aerospace vehicles. The MAJCOM commander ensures procedures for preliminary message notification of such mishaps are established. This allows a timely decision on Air Force investigative participation.

1.10. Investigating All Other Contractor Mishaps. Investigate and report all contractor mishaps resulting in reportable Air Force losses according to this instruction. Investigate and report contractor mishaps causing reportable losses to other governmental departments or agencies according to appropriate contract negotiated requirements. The MAJCOM commander who initiates the contract ensures:

- A record of the mishap involving Air Force property is entered into the Air Force safety reporting system. This record includes required message and formal reports. HQ AFSC assigns mishap accountability to the command owning the items under contract.
- A record of mishaps involving other DoD property is forwarded to the involved agencies with an information copy to HQ AFSC/SEC
- With MAJCOM commander approval, Defense Contract Management Command (DCMC) safety personnel endorse contractor Class C mishap reports to verify causes and validate corrective actions.
- Other DoD agencies in tenant status on Air Force installations investigate and report mishaps involving their personnel and property using their own agency forms or procedures.

1.11. Investigating Mishaps Involving Research and Development (R&D) Programs. Investigate accidental losses in R&D programs according to their class and category. These reports have limited distribution.

1.11.1. R&D program mishaps are Air Force mishaps if the involved aircraft, engines, explosive munitions, space systems, missiles, or major missile components (stages, guidance-and-control sections, payloads, etc.) are owned in whole or in part or controller operationally by the Air Force; are government-furnished, loaned, or leased to a non-Air Force agency for modification, test, or experimental project, where the Air Force bears the risk of loss; or are undergoing development test and evaluation (DT&E) or initial operational test and evaluation (IOT&E) by the Air Force or a contractor.
1.11.2. Mishaps that have nothing to do with R&D testing, but merely involve R&D items, are not R&D mishaps unless the vehicle or explosives system itself (rather than the equipment installed on it) is being tested or if the equipment or item being tested is involved as a factor in the mishap.
1.11.3. Identify R&D mishaps by class, category, and mishap event number. (Mishap event numbers are described in paragraph 4.8.2.) Examples of this format include Class A Flight R&D (event number) and Class B Explosives R&D (event number). When reports contain competition-sensitive information, identify this after the mishap event number. Forward them only to HQ USAF/SE, HQ AFSC/SEC, and any other addressees the investigating MAJCOM commander directs. Forward a copy to HQ AFSC/SEW when an R&D mishap involves radioactive material or sources.
1.11.4. HQ AFSC establishes internal procedures to protect proprietary or competition-sensitive information. The investigating MAJCOM commander promptly notifies HQ AFSC when limited distribution and internal protective measures are no longer needed. MAJCOM commanders may convert internal technical investigations to this instruction's format to satisfy reporting requirements when approved by HQ AFSC. If MOFEs are prepared, HQ AFSC forwards them only to the MAJCOM involved. During the final evaluation process, HQ AFSC may correct a mishap's category if it does not meet the criteria for an R&D mishap.

1.12. Using Test Organizations in Investigations. Test organizations may take part in investigations when they have test responsibilities. Convening authority ensure preliminary reports are sent to these test organizations when DT&E is involved.

1.13. Defining Types and Limiting Use of Safety Reports. Produce safety reports to document causes of mishaps and to take preventive actions. These reports are for official use only (FOUO) if they are not classified. They may be privileged or non-privileged mishap reports. The following terms and information implement AFPD 91-2 policies on safety reports, their uses, and prohibitions on their use. (***NOTE:*** See AFI 37-131, *Air Force Freedom of Information Act Program,* for a complete definition of FOUO.)
1.13.1. **Privileged Reports.** Aircraft, space, missile, and nuclear safety investigation reports are privileged reports containing privileged and non-privileged information. SIB message reports (except the 8-hour preliminary message report) and Part II of Class A and B formal reports are privileged portions of the reports. Class C and HAP reports for these categories are not prepared in two parts, but contain privileged information. ***NOTE:*** Aircraft reports include flight, flight related, and aircraft involvement reports.
★1.13.1.1. Privileged Information. This refers to information that is exempt by law from disclosure outside the Air Force safety community. The Air Force treats this information confidentially to ensure commanders quickly obtain accurate mishap information, thereby promoting safety and combat readiness. Privileged information includes:

- Findings, conclusions, causes, recommendations, and the deliberative process of the SIB. This protection also applies to the findings, conclusions, causes, recommendations and deliberative process of the investigator in a ground or explosive mishap.
- Any information obtained from a contractor who built, designed, or maintained equipment involved in a mishap, which information was provided pursuant to a promise of confidentiality.
- Statements given to the SIB pursuant to a promise of confidentiality.
- Computer generated video tape simulations or simulator reenactments created in conjunction with safety investigations, except those associated with space mishaps.
- Life Science Materials

1.13.1.2. Promise of Confidentiality. Because critical information related to a mishap is often available only from persons directly or indirectly involved in the mishap, it is necessary to establish a means of providing a frank and open exchange of such information without fear of incrimination or otherwise adverse action. Therefore, the Air Force may give a promise of confidentiality to encourage frank and open communications to individuals who provide witness statements to a SIB or investigating officer and to government contractors who built, designed, or maintained the equipment and participate in the investigation. Only primary duty safety personnel as members of the Disaster Control Group, or the designated interim and permanent SIB members may offer promises of confidentiality for witness testimony. This information is privileged and protected from disclosure to unauthorized personnel.

1.13.1.3. Official Use of Privileged Information. The Air Force ensures privileged safety information is used only by persons and agencies whose duties include relevant mishap prevention responsibilities. Access will be limited to information necessary for and consistent with mishap prevention.

- When their duties include mishap prevention and when it is necessary to develop, take, or review preventive action, the following officials may obtain access to privileged safety information: commanders of flying, space, and missile organizations, safety officers, flight surgeons, and HQ USAF/SE personnel, air, space, and missile crews, those who supervise and train air, space, and missile crews, mishap board members, and those who are appointed to assist mishap board members.
- Other US military services and DoD agencies responsible for flying, supporting or maintaining Air Force aircraft, may receive comparable privileged safety information when needed for mishap prevention. In certain cases, the Air Force has agreed to exchange privileged mishap information with other US government agencies solely for mishap prevention purposes.
- Comparable persons and offices within EPAF countries may have access to privileged information pertaining to F-16 mishaps only. These countries are participants in the multinational fighter program of co-production of the F-16 with the United States. The release authority (HQ USAF/SE) delegates F-16 SIBs authority to release a version of F-16 final mishap message reports solely to the EPAF via AIG 9399. This information is for mishap prevention purposes only.
- Agencies such as the staff judge advocate, historian, and public affairs do not receive privileged information because of possible conflict of interest and because use by such agencies is not for mishap prevention purposes. If you need legal counsel about the use of privileged information, contact HQ AFSC/JA

1.13.1.4. Controlling and Handling Privileged Reports. Any Air Force personnel having access to these reports and their attachments, or information derived from them, have a duty to control them in a way that prevents their use in any other way other than their authorized purpose: mishap prevention. The Air Force does *not* use privileged reports (including message reports produced after the preliminary 8-hour report), their attachments, or information extracted from them, as evidence for punitive, disciplinary, or adverse administrative actions, for determining the misconduct or line-of-duty status of any person, in flying evaluation board hearings or reviews, to determine pecuniary liability or liability in claims for or against the United States, or in any other manner in any action by or against the United States. Any release outside the Air Force, even to members of Congress or officials of the Department of Justice (including offices of US Attorneys), is governed by this instruction and must be approved by HQ USAF/SE . For purposes of this and the following paragraph, the terms "control" and "access" include both control and access obtained in the normal course of one's duties and control and access obtained by any other means--whether or not incident to normal duties and whether or not such access was authorized. When these reports are no longer needed for mishap prevention purposes, destroy them according to AFMAN 37-139, *Records Disposition--Standards*.

★1.13.1.5. Prohibited Uses of Privileged Safety Reports. Members, Air Force employees and government contractors will not wrongfully use, permit the use of, gain access to, or allow access to any privileged safety report, portions thereof, or the information therein for other than officially authorized mishap prevention purposes. Members, Air Force employees and government contractors will not append or enclose these reports, in whole or in part, in any other report or document unless the sole purpose is to prevent mishaps or is factual information that has been released pursuant to law or regulation. These prohibitions pertain to Part II of formal reports (AF Form 711, **USAF Mishap Report**); interim status and final message reports on aircraft, missile, and space mishaps as well as nuclear reports; and special safety investigation reports prepared by HQ AFSC relating to aircraft, missile, and space mishaps and nuclear reports. Violations of these prohibitions are punishable under Article 92(1), UCMJ, and may be grounds for disciplinary actions according to civilian personnel regulations.

1.13.2. **Handling Non-privileged Reports.** Ground, miscellaneous air operations, and explosives safety investigation reports normally do not contain privileged information and are non-privileged reports. Non-privileged information is releasable outside the Air Force safety community and outside the Air Force once Privacy Act information is removed. The installation chief of safety is the release authority for non-privileged reports to other Air Force personnel. When release will be made outside the Air Force, HQ AFSC/JA is the release authority. ***NOTE:*** There might be occasions, such as mishaps involving complex weapon systems, equipment, or military-unique items, when explosives and ground safety investigations would require privileged status. When this appears to be the case, contact HQ USAF/SE for approval of privileged status for these safety reports.

★1.14. Transmitting Safety Messages over Electronic Mail: To protect the correct distribution and handling of safety messages, originating organizations should continue to use AUTODIN and the addressing requirements of this instruction. E-mail can be used by AF base message centers to conduct base distribution. The following procedures are approved methods for transmitting safety mishap messages via electronic mail to agencies not addressed in the original message or

listed in the message address tables in Chapter 4. The procedures are in accordance with AFI 37-129, AFI 37-131, and AFI 37-132.

★1.14.1. **Intrabase:** This includes wide area networks or local area networks served by a single network control center. The transmitting and receiving units will use appropriate limited-use, privacy act, and For Official Use Only markings as required and transmit unencoded and unencrypted.

★1.14.2. **Interbase with Encryption (not Encoding) Capability:** When encryption capabilities are provided between base gateways the message should be encrypted with appropriate markings on the original message.

★1.14.3. **Interbase with no Encryption Capability:** When no encryption exists between base gateways the transmitter will compress the mishap message and protect the file with a password. Attach the compressed file to the e-mail message and transmit to the addressed destinations. Send the applicable password in a separate message or by another mode of transmission.

★1.15. Disclosing Privileged Reports. The Air Force uses a judicially recognized government privilege to protect the investigative process, quickly and accurately obtain all evidence about a mishap, and take appropriate corrective action as soon as possible. Safety reports and resulting products thus effectively help prevent mishap recurrence and thereby enhance national security through combat readiness. All those with access to privileged reports and resulting products must ensure the restrictions on handling mishap information are enforced. It is the responsibility of the safety staff to ensure individuals working with, or having access to, safety reports, messages, video tapes or computer generated simulations are knowledgeable of the limitations placed on their uses and the required protection of such materials (see AFI 91-202, *The US Air Force Mishap Prevention Program*). In addition, the installation safety staff must annually review communications center distribution of mishap messages to ensure requirements are valid.

Note: Cockpit Voice Recorders (CVR) are no longer afforded privilege statement status. The CVRs will be transcribed by court reporter. Actual tape is protected under privacy act concerns.

1.15.1. **Conditions for Limited Disclosure.** Despite these restrictions, the Air Force releases factual parts of limited-use safety reports in certain cases. These factual parts consist essentially of Part I of the two-part report. They are released as follows:

1.15.1.1. Freedom of Information Act (FOIA) requests under Title 5, United States Code, section 552 (5 USC 552). The disclosure authority is in accordance with AFI 37-131, paragraph 16, after consulting them, send requests to HQ AFSC/JA, 9700 G Avenue SE, Kirtland AFB NM 87117-5670.

1.15.1.2. Providing exhibits to AFI 51-503, *Aircraft, Missile, Nuclear, and Space Accident Investigations*. The safety investigator gives the accident investigator of the same mishap the original documentation of the factual material in Part I of the formal report. See AFI 51-503 and paragraph 1.15.3.2 of this instruction.

1.15.1.3. Disclosing to Air Force organizations. The factual portions may be released to offices and agencies within the Air Force for official purposes by HQ AFSC/JA.

1.15.2. **Handling Requests for Disclosure.** Individuals or agencies outside the Air Force frequently seek information from safety reports produced under this instruction. Upon receipt of any request for privileged safety information, Air Force personnel contact HQ AFSC/JA. Upon receipt of a legal process requiring participation in a court proceeding, including depositions and requests for production of documents, contact HQ AFSC/JA and the nearest Air Force base legal office. Fax a copy of the legal process to HQ USAF/JACT (DSN 226-9094 or (703) 696-9094). Encourage requesters to ask the MAJCOM/JA for the AFI 51-503 accident report if one has been prepared.

1.15.3. **Disclosing to Other Investigators.** The convening authority also convenes an accident investigation in accordance with AFI 51-503 following all Class A mishaps and nuclear accidents. (***NOTE:*** The AFI 51-503 investigation is the responsibility of the gaining MAJCOM for AFRES.) This accident investigation is done independently and apart from any part of the safety investigation. It is used to obtain and preserve all available evidence for use in litigation, claims, disciplinary action, or adverse administrative actions. The relationship between the two investigations is shown below:

1.15.3.1. Safety investigations conducted under this instruction take precedence over related investigations convened under AFI 51-503 or any other Air Force directives. In case of conflict between the two investigations in gaining access to the scene, acquiring and examining evidence, and interviewing witnesses, the safety investigation has priority.

★1.15.3.2. Despite the separation and relative priorities of the two investigations, the safety investigator provides certain information to the AFI 51-503 accident investigator as soon as possible.

- Give the original documentation of all non-privileged materials (generally Part I of the formal safety report) to the AFI 51-503 investigator and obtain or exchange a written inventory. Readable copies are acceptable for the safety report.
- Attach the inventory to the memorandum sending the formal safety report to HQ AFSC/SEC
- Exchange information either as it becomes available or in a single package. Exchanged information includes Part I of the safety report; logs, directives, and photographs not staged; recordings of air-to-air, air-to-ground, and ground-to-air

voice transmissions that capture information at the time of the mishap; flight data recorder tape; and all pre-mishap medical records. (See paragraph 5.5.1.17 for photograph guidelines.)

- Do not release medical analysis by a SIB member, findings, recommendations, and comments or references to witness statements. Coroner's reports are releasable, either through the SIB (if available at the time) or through HQ AFSC/SEC. TOX test results and autopsy protocols are not privileged; however, the AFI 51-503 investigator obtains them independently of SIB proceedings.
- The safety investigator releases the wreckage to the accident investigator after finishing with it.
- Give a complete list of all witnesses interviewed during the safety investigation to the accident investigator regardless of whether the statements of the witnesses are in the safety report. Provide this list only after the SIB decides to conduct no further interviews.
- Send unclassified or declassified original films and videotapes visually depicting the actual mishap sequence, including videotape recordings (VTR) of the heads-up display (HUD), to HQ AFSC/SEC. Do not sanitize copies of film and videotape depicting the mishap sequence. Provide these "as is" to the AFI 51-503 accident investigator. Include written instructions to send the film or videotape to HQ AFSC/SEC when the AFI 51-503 investigation is complete. (Do not send videotapes and films not visually depicting the mishap sequence to HQ AFSC/SEC.) NOTE: Actual mishap videotapes and films will become part of the HQ AFSC/SEC master report (copy 1) at Tab O (if factual only) or Tab T (if privileged). Include copies of non-official videotapes or films made by individuals and return tapes to original owners. Tapes and films of simulated, computer-generated, or reenacted portions of a mishap flight made by or for the SIB are always privileged material. Paragraphs 5.5.1.13 and 5.5.2.1 describe Tabs O and T in greater detail.
- Factual photos where human remains are evident are turned over to the 51-503 investigator in a separate envelope.

1.15.3.3. Provide copies of any records or materials required or used in the identification process and copies of requested photographs of the deceased to the mortuary officer. These products may be either AFIP or local flight surgeon generated. HQ AFPC/MPCCM carefully controls and maintains these documents on permanent file.

1.15.3.4. Persons occupying full-time safety positions routinely examine privileged documents. Do not appoint them to AFI 51-503 accident investigations as long as they are performing full-time safety duties.

★1.15.3.5. Interim or permanent SIB members will not be witnesses for other boards investigating the same mishap except to provide part I factual information.

1.15.4. **Disclosing to News Media and Next of Kin.** Because of the Air Force's policy to keep the public informed of Air Force action and activities, both favorable and unfavorable, release information on Air Force mishaps to the news media promptly as follows:

1.15.4.1. The convening authority or designated information officer releases factual information about a mishap, including photographs, only as directed in AFPD 35-1, *Public Affairs Management*.

1.15.4.2. The safety officer will work closely with the commander, public affairs officer, and HQ AFSC/JA to ensure information released to the news media complies with the following disclosure limitations. Do not include or suggest the following information in the factual release:

- Mishap responsibility on the part of any person.
- Partial or complete statements, quotations, or opinions expressed by any individual witnessing the mishap.
- Failure of equipment or facilities or inadequate support services.
- Indications of legal liability of the US Government or any individual for the mishap.
- Classified information.
- Cause factors or recommended corrective actions.
- Quotations or paraphrases from any limited-use report submitted under this instruction.
- Factors not causal in the mishap. Do not comment about whether or not specific factors are considered causal. For example, do not say the weather was not a factor, simply state what the weather conditions were at the time.

1.15.4.3. AFI 36-3002 and AFPD 35-1 provide guidance on communications with relatives or representatives of victims of a mishap. The squadron commander of the victim, assisted by the casualty notification officer, will personally notify the immediate next-of-kin when feasible. In these communications, comply with the restrictions in paragraph 1.13.

1.15.4.4. Do not grant or imply permission to review the full report in memorandums of circumstance, other correspondence, or conversations on the mishap. However, in response to inquiries, tell relatives the complete accident investigation compiled under AFI 51-503 is available to them (if one was conducted), and refer them to the command level legal officer directing the AFI 51-503 investigation. Send requests for any portion of the safety investigation in writing to HQ AFSC/SEC, Kirtland AFB NM 87117-5670.

★1.15.5. **Restricting Information Derived From Privileged Reports.** This paragraph prescribes courses of action consistent with both the protection of privileged information and the requirements of the mishap prevention program.

Interim or SIB members may testify about purely factual matters within their knowledge and not otherwise available to the other investigation. To sustain the claim of privilege for this information, use the following guidance:

1.15.5.1. Limiting Use Within the Air Force. The official use of privileged reports ranges from providing sanitized briefs and statistics to full disclosure of the reports within the Air Force. In each case, answer the question of whether mishap prevention goals can be reached without disclosing privileged information. If the answer is yes, sanitize the information. If the answer is no, affix restrictive markings to the document similar to those used for safety reports (figure 4.1). For further assistance contact HQ AFSC/SEC.

★1.15.5.1.1. Unit safety officers may sanitize mishap reports and media for unit use and for use by appropriate contractor personnel. Wing/Group ground/flight safety managers or designated representatives will review and approve reports and other media sanitized by subordinate unit safety officers prior to release. Contractor personnel must sign a memorandum acknowledging that they understand the limitations on the use of safety reports and other media. See Figure 1.1 for memorandum example.

1.15.5.1.2. HQ AFSC sanitizes reports for other uses and approves their release. Sanitizing reports or extracts from reports means obscuring the relationship between the identity of a mishap and the findings, conclusions, recommendations, and deliberative processes resulting from the investigation and statements made under a promise of confidentiality. Some mishaps, because of widespread publicity or unique circumstances, cannot be fully sanitized. Sanitizing a report involves separating the following identifying information from related SIB or investigator findings, causes, recommendations, conclusions, or opinions:

- Date and place of the mishap.
- Aircraft, missile, vehicle, or weapon serial number.
- Names and social security account numbers (SSAN), if included, of persons involved.
- Any other detail identifying the mishap.

NOTE: Causes may be included in briefs of mishaps if the identifying information is omitted.

1.15.5.1.3. Remove identifying information and markings identifying the documents as privileged or FOUO before reproducing sanitized message reports or extracts of formal reports by copy machine.

1.15.5.2. Limiting Use Outside the Air Force. Protecting privileged reports requires the consistent demonstration of intent not to release them outside the Air Force. In practice, however, the interaction between the Air Force and other entities requires some direct communication, such as sharing mishap information with unified commands when appropriate. Also, the Air Force shares certain mishap prevention information in the interests of the general safety community. In most cases, sanitized briefs, summaries, studies, and statistical data serve these aims. When they do not, comply with the following instructions.

1.15.5.2.1. Limiting Use With Contractors:

- The convening authority may grant an involved, accredited contractor or manufacturer's representative access to the scene of a mishap. Do not grant visual access to message reports, Part II of the formal report, or group reports.
- Sometimes contractors who design, manufacture, or maintain equipment involved in mishaps send representatives to support Air Force SIBs at the request of the Air Force. When this occurs, SIB presidents and investigators will ensure those representatives understand that the Air Force will exert a claim of privilege over documents provided by the representatives to the SIB when the Air Force has sole possession or control. Depending upon the circumstances, a claim of privilege may not protect notes, documents, and other matter produced during the SIB investigation and retained by the manufacturer or contractor representatives because of the potential for compromise. Grant these contractors access to privileged information only if it is essential to correct a deficiency in their equipment and sanitized information is not adequate to take corrective action. Inform contractors they may not release the information outside contractor safety channels. See figure 3.2.
- Contractors providing weapon system maintenance support at the base having the mishap are performing an Air Force function. Authorized officials may provide them access to those parts of the report involving contractor activity when sanitizing is not practical. Ensure contractors understand and agree to their responsibilities to treat such information as a confidential communication. Advise them such disclosure is necessary for fulfillment of contractual obligations; however, the number of contractor employees who have access to the information shall be held to a minimum. Such safety information is Air Force property, and the official providing access will advise the contractor not to maintain such information in their files. Use the memorandum at figure 3.2 and refer to paragraph 3.10.2.4.
- Air Force operations conducted at contractors' facilities require privileged safety information handling.
- Contractors providing weapon system crew training may need information from safety reports, video, and other similar media to build training scenarios, or contractors providing maintenance services may need information from safety reports to benefit from the lessons learned. The wing, MAJCOM safety staff, or HQ AFSC may provide a compilation

of lessons learned from several mishaps (if all references traceable to a specific mishap are eliminated). When information from a specific mishap is needed see paragraph 1.15.5.1.1 for specific actions. No further release is authorized outside their organization.

1.15.5.2.2. Limiting Use With Other Services. When Air Force mishaps involve the USA, USN, or USCG, paragraph 3.6.9 applies. Approval authority for exchanging formal safety reports is HQ USAF/SE.

1.15.5.2.3. Limiting Use With NTSB and FAA. The release of safety information to the NTSB and FAA is governed by AFJI 91-206. For procedures on handling critical safety information on civilian variant aircraft in Air Force service, see paragraph 4.5.3.

1.15.5.2.4. Limiting Use With Foreign Nationals. Release of safety information to foreign nationals is governed by AFI 37-122, *Air Force Records Management Program.* NATO STANAGs 3101, *Exchange of Accident/Incident Information Concerning Aircraft and Missiles*, and 3531, *Safety Investigation and Reporting of Accidents/Incidents Involving Military Aircraft and/or Missiles*, apply to requests for safety information or related data from NATO military organizations. In addition, HQ AFSC maintains a list of nations operating US weapon systems that are authorized to receive non-privileged safety information on a recurring basis. The "Safety Data Exchange Roster," periodically revalidated by SAF/IA, identifies USAF focal points within each nation; those offices are ultimately responsible for conveying the data to their host governments.

1.15.5.2.5. Limiting Use of Nuclear Safety Reports With Agencies Outside the Air Force. HQ USAF/SE may approve the release of extracts of nuclear safety reports to certain agencies subject to the rules in paragraph 1.14. These are US governmental agencies with statutory jurisdiction, such as the Defense Special Weapons Agency (DSWA); Commander, DSWA Field Command; and operations offices or authorized contractors of the Department of Energy. The MAJCOM Commander may provide DULL SWORD reports about weapons and common equipment deficiencies to the Unified Commander as deemed appropriate and necessary for the theater commander to accomplish his or her role in nuclear surety. Send this information by inclusion of the appropriate unified command address in the message report as provided by the MAJCOM supplement to this instruction. The Unified Commander ensures the information is treated as privileged information and not released or distributed outside the respective headquarters without first obtaining permission from HQ USAF/SE. The Air Force releases this information only to reach its nuclear surety goals.

1.15.5.2.6. Limiting Use With ANG Personnel Who Are Not Air Technicians. The Air Force consists of the Regular Air Force (REGAF), the ANG, and the AFRES according to Title 10, United States Code, Section 8062. Do not withhold privileged safety reports from nontechnicians who have a need to know and if sanitized information is not adequate to develop, take, or review corrective action. The restrictions in paragraphs 1.13.1.4 and 1.13.1.5 apply to these personnel. Persons having a need to know include those involved in the mishaps; those whose duties include the preparation, dispatch, or internal distribution of safety reports; and those who act in response to mishap prevention recommendations. As in the relationship with contractors, apply the test of practicality to decide whether to sanitize safety information. When mishap prevention goals cannot be met by using sanitized information, use privileged safety data. In such cases, ensure nontechnicians who receive such information understand its privileged nature, and advise them of the restrictions in paragraphs 1.13.1.4 and 1.13.1.5. Advise them releasing this information to them does not show the intent to release it outside the Air Force. Unless otherwise indicated, such safety information is still Air Force property.

1.16. Handling and Disclosing Ground and Explosives Safety Reports:

1.16.1. Mishap prevention is the purpose of these reports These reports are non-privileged reports and have no claim of privilege. However, they are FOUO and are handled according to AFI 37-131. The circumstances of some ground and explosives reports (for example, aircraft involvement mishaps) may necessitate their designation as privileged reports (paragraph 1.13.1).

1.16.2. Do not disclose the identities of involved personnel in educational or promotional materials.

★1.16.3. HQ USAF/SE is the disclosure authority for ground and explosives safety reports outside the organization that generated the report. Local commanders or their safety officers may release reports or extracts of ground and explosives safety investigations convened under their authority to other local agencies having an official interest in those reports. The ground or explosive safety reports may not be used for any other purposes other than mishap prevention. However, the factual portions of a ground mishap may be used to adjudicate a claim for damages filed against the Air Force.

1.16.4. To control reports, retain only one copy of each safety report at wing or base, intermediate command, and MAJCOM safety offices. Air Force and unified command agencies may view these reports for official purposes, but they do not release copies without approval of the appropriate disclosure authority. Advise personnel viewing these reports that findings of cause, conclusions, recommendations, corrective actions, and witness statements taken by safety investigators in the course of the investigation are used primarily for mishap prevention purposes. (AFI 91-302, *Air Force Occupational*

Safety and Health, controls Air Force relationship with OSHA.) Refer all requests for release by HQ AFSC/JA according to paragraph 1.15.2.

1.16.5. To release reports, upon written request, HQ AFSC/JA provides the releasable portions to the requester.

1.17. Disposing of Records. Dispose of records according to AFMAN 37-139.

1.18. When To Obtain Legal Representation. The convening authority should ask for the help of The Judge Advocate General (through HQ AFSC/JA and the Office of the Director of Special Investigations) when non-DoD agencies take part in a mishap investigation or hearing that:

- Involves a collision between Air Force aircraft or missiles and non-DoD aircraft.
- May arouse unusual interest because of injury, illness, or death of non-Air Force civilians.
- May arouse unusual interest because of damage to public or private property.
- Results in possible radioactive contamination of persons, places, or things.

★Figure 1.1. Contractor Privileged Statement of Understanding

STATEMENT OF UNDERSTANDING

Protection of privileged safety information resulting from investigations of Air Force mishaps is essential in maintaining the integrity of the process whereby mishap information is obtained and evaluated. You, as an independent contractor, are performing services that assist the mishap prevention program of the United States Air Force.

For this reason, you are being allowed access to privileged mishap reports that contain privileged safety information. Access is solely for the purpose of mishap prevention and no other use of the information by you or your firm is authorized. You are not to make any copies of the reports or disseminate the information outside your organization or to personnel in your organization that are not directly providing the services required by contact. You are especially cautioned against providing this information to your general counsel's office, legal staff, or any personnel involved in litigation.

After you are finished with any document provided, you are required to return them to the Air Force. Retaining copies is not authorized.

I acknowledge receipt and understanding of the above and agree to abide by the conditions set forth.

_____ _____

(Contractor-Employee) (Date)

Chapter 2

DETERMINING MISHAP CATEGORIES, CLASSES, AND COSTS

2.1. Mishaps Not Reportable Under This Instruction. Do not submit safety reports on the following types of damage or injuries:

- ANG State Employees. ANG state employees are not reportable either on or off-duty in accordance with this instruction unless their injury or illness involved Air Force Personnel, contractor operations, or property.
- Felonious Acts. Injuries resulting from altercations, attack, or assault, unless incurred in the performance of official duties when an attack or assault would not be a felony; such as a nurse assaulted by a patient in a mental institution.

2.1.1. **Administrative Hospitalization.** Do not report instances of persons referred to the hospital for treatment and retained beyond the day of admission solely for administrative reasons.

2.1.2. **Allergic Reactions.** Do not report adverse reactions resulting directly from drugs, serums, vaccines, toxoids, anesthetics, insect stings or bites, or overdoses from drugs (including alcohol poisoning).

★2.1.3. **Civilian Personnel Injuries.** Do not report injuries to Department of the Air Force (DAF) civilian personnel occurring during lunch periods resulting from activities unrelated to eating lunch. Traveling to and from on-base snack bars, clubs, etc., is related to having lunch. Do not report injuries that occur as a result of falls in parking lots going to and from work. Walking to and from the parking lot is off-duty and not work related. If a person is performing work-related activities (for example, a worker is repairing parking lot asphalt) and is injured, that injury is occupational and would be reported. ***NOTE:*** Report all civilian injury and illness cases qualifying under the Office of Worker's Compensation Program (OWCP) (paragraphs 4.12 through 4.13). (See Atch 1, **On-Duty** definition).

2.1.4. **Combat Damage.** Do not report damage or injury by direct action of an enemy, hostile force, or friendly fire. However, if combat damage results in a subsequent attempt to use life support, egress, or survival equipment and the equipment fails for reasons not attributable to the combat damage, report the equipment failure to HQ AFSC/SEF on AF Form 711GA, **Life Sciences Report of an Individual Involved in an Air Force Flight/Flight Related Mishap**. (Do not assign a mishap or unit control number to such an equipment failure; it is not a mishap.)

★2.1.5. **Component Part Malfunctions or Failures.** Do not report malfunctions or failures of component parts due to wear and tear regardless of the cost of the single component part, if the malfunction or failure is the only damage and the sole required corrective action is to replace or repair the component part. This exemption does not apply to certain nuclear safety deficiencies. Additionally, this exeimption does not apply when the malfunction or failure of the component part results in damage to other component parts or systems (see paragraph 2.4.4). ***NOTE:*** For pylon-mounted engines, the cowling assembly, but not the pylon, is part of the engine.

- Failure of a jet engine in which damage is limited to the engine itself is not reportable unless it meets reporting criteria in paragraph 7.4.7; see also paragraph 2.1.12.
- Do not report failure of on-orbit space components that are beyond their mean mission duration (MMD), if that is the only reason for the mishap

2.1.6. **Contractor Operations Mishaps.** Do not report injuries to contractor personnel or damage to contractor equipment occurring during Air Force contractor operations.

2.1.7. **Death From Natural Causes.** Do not report death due to lack of or inappropriate medical attention or natural causes unrelated to the work environment. ***EXCEPTION:*** Report the death by natural causes of an aircrew member during flight or a missile crewmember on alert as a physiological mishap (paragraph 7.4.7.13).

2.1.8. **Electro-Explosive Device Activation.** Do not report intentional electro-explosive device activation when part of it is a normal missile test or launch sequence, the launch is aborted, and there is no other reportable damage.

2.1.9. **Escaping and Eluding Arrest Injuries.** Do not report injuries to persons in the act of escaping from or eluding military or civilian custody or arrest.

2.1.10. **Expected Airdrop Operations Damage.** Do not report damage or destruction of equipment, pallets, parachutes, etc., as a result of fair wear and tear expected during airdrop operations.

2.1.11. **Injuries and Property Damage Resulting from Criminal Acts.** Do not report injuries or property damage resulting from criminal acts unless an unsafe condition may have contributed to the injury or damage (paragraph 3.11).

2.1.12. **Foreign Object Damage (FOD).** Do not report aircraft, air breathing missile, or RPV engine FOD discovered during scheduled engine disassembly (depot overhaul for maximum operating time, not for known or suspected FOD). ***NOTE:*** FOD may still be reportable under TO 00-35D-54, *USAF Materiel Deficiency Reporting and Investigating System.*

2.1.13. **Homicides, Suicides, and Intentionally Self-Inflicted Injuries.** Do not report attempted or actual homicides or suicides, or intentionally self-inflicted injuries.

★2.1.14. **Jettison of Materiel Nonessential for Flight.** Do not report intentional, controlled in-flight jettison or release of canopies, cargo, doors, drag chutes, hatches, life rafts, auxiliary fuel tanks, or other externally carried equipment not essential for flight when no injury or reportable damage to the aircraft or other property occurs. However, report intentional jettison of missiles, drones, rockets, and nonnuclear munitions when the reason for jettison is their malfunction. Report the intentional or inadvertent release of missiles or explosives that impact off range. Describe all actions taken to recover or safe these items.

2.1.15. **Missile or Space Launch Damage.** Do not report normal residual damage as a result of a space or missile launch.

2.1.16. **Musculoskeletal Disorder Injuries.** Do not report injuries resulting from musculoskeletal disorders and unrelated to mishap-producing agents or environments normally associated with daily work or recreation. However, repetitive motion disorders such as carpal tunnel syndrome are reportable through medical reporting channels.

★2.1.17. **Natural Phenomena.** Do not report natural phenomena ground mishaps where adequate preparation, forecasting, and communication actions were taken and there were no injuries, (to include ground (aircraft involved) mishaps). However, report military and civilian injuries resulting from these mishaps. In addition, reportable damage to Air Force aircraft or external stores caused by encounters with natural phenomena in flight is investigated and reported IAW Chapter 7 of this instruction.

2.1.18. **Nonoccupational Disease .** Do not report a disease when a known preexisting medical condition is the proximate cause of lost time rather than the injury. An example would include a minor laceration suffered by a hemophiliac that results in time away from work. However, complications of the injury (such as the infection of a cut aggravated by a work-related activity) that results in lost time would be reportable.

2.1.19. **Parachuting Injuries.** The service of assignment reports US military and USCG personnel injuries received during parachute operations from Air Force aircraft. Report these as flight-related Air Force mishaps only when the persons injured are permanently assigned to an Air Force unit or if the parachutist collides with an Air Force aircraft (paragraph 3.2.4 and 7.4.7.1.1).

2.1.20. **Prior Injuries.** Do not report injuries sustained before entry into the Air Force or commencement of employment, unless specifically aggravated during current service or employment. Report the injury if a mishap results in reinjuring of or additional injury to the prior condition.

★2.1.21. **Stress and Strain Injuries.** Do not report injuries resulting from minimum stress and strain such as simple, natural, nonviolent body positions or actions such as the simple act of bending over to pick up some small object or to tie a shoe, dressing, sleeping, coughing, or sneezing.

2.1.22. **Testing Mishaps.** Do not report damage to Air Force equipment or property during authorized testing, including missile and ordnance firing, providing such damage was expected as a part of the cost of the test to include:

- Damage or destruction resulting from using a remotely piloted vehicle (RPV) as an authorized target.
- Tests to determine operational limits or destruction levels or limits.
- Damage or destruction resulting from flying an RPV within critical profile parameters (paragraph 8.6.2). However, report intentional destruction of a missile before it completes the entire planned test as a missile mishap (chapter 8), and report mishaps involving R&D programs (paragraph 1.10).

★2.2. Defining Mishap Category. The Air Force categorizes mishaps by the environment in which they occur. A flowchart (figure 2.1) is helpful in determining the correct category of a mishap. In all cases, one category can be a cross category for another, i.e. flight mishap (explosive involvement). In general, the following rules apply: (see glossary for full definitions)

- *Aviation mishaps* are those mishaps that involve Air Force aircraft. They are further categorized as either a flight, a flight-related, or flight-unmanned vehicle mishap.
- *FOD mishaps* occur when turbine engine damage results from external foreign objects, the damage is confined to the engine or integral engine components, and damage external to the engine totals less than $10,000. See Chapter 14 for FOD mishaps.
- *Explosive mishaps* involve explosive devices or toxic chemical agents that function abnormally or are damaged.
- *Missile mishaps* are those mishaps that involve missiles, missile support equipment, or sub-scale RPVs.
- *Nuclear mishaps* are further categorized as nuclear weapons system mishaps or nuclear reactor system and radiological mishaps. Nuclear mishaps are not categorized by dollar figures. See Chapter 12 for nuclear weapons, nuclear weapon systems, and radiological mishaps.
- *Space mishaps* involve space systems or unique space support systems that are limited to components or equipment not commonly used outside the space industry. Space-related mishaps involving space systems or unique space support systems that may be used in other applications can be classified as ground (space involvement).
- *Ground mishaps* are those mishaps not defined by the above. They occur on- or off-duty without intent for flight (Air Force or non-Air Force aircraft), on ground or water, on or off an Air Force installation; and they involve Air Force personnel and operations, contractor operations, or property.
- *Miscellaneous air operations mishaps* represent a special category where Air Force personnel are killed or injured and intent for flight exists, but Air Force aircraft are not involved. This category includes Aero Club aircraft (paragraph 15.2.2).

2.3. Defining Mishap Class. Classify nonnuclear mishaps by the total direct dollar cost of damage (paragraph 2.4) and degree of injury or occupational illness. Property damage includes the official estimate of damage to non-Air Force property.

★2.3.1. **Class A Mishap.** A mishap resulting in one or more of the following:

- Reportable damage of $1,000,000 or more.
- A fatality or permanent total disability (due to injury or occupational illness, e.g., medical discharge, separation, or non-medically induced comatose).

- Destruction of an Air Force aircraft, spacecraft, or missile during launch (see chapter 9 for orbital spacecraft mishaps). Aircraft will be considered destroyed when the man-hours required to repair the aircraft exceed the maximum stated in the "major repair man-hours" column of TO 1-1-638, *Repair and Disposal of Aerospace Vehicles*. A damaged aircraft not repaired is not automatically a "destroyed" aircraft. The decision not to return a damaged aircraft to service is independent of the mishap class. Classify the mishap damage according to the total estimated repair cost when the aircraft will not be returned to service.

2.3.2. **Class B Mishap.** A mishap resulting in one or more of the following:

- Reportable damage of $200,000 or more but less than $1,000,000.
- A permanent partial disability.
- Inpatient hospitalization of three or more personnel.

2.3.3. **Class C Mishap.** A mishap resulting in one or more of the following:

- Reportable damage between $10,000 and $200,000.
- An injury resulting in a lost workday case involving 8 hours or more away from work beyond the day or shift on which it occurred; or occupational illness that causes loss of time from work at any time. For military personnel, do not count the day of injury or the day returned to duty. Do not count days when military personnel were not scheduled to work. (See paragraph 2.1.1)

NOTE: Other aircraft incidents may be reportable as a Class C mishap regardless of damage (for example, engine shutdown, physiological, etc.). See paragraph 7.4.7.

★2.3.4. **Class D Mishap (applies to explosives, ground, and air-launch missile mishaps only).** A mishap resulting in one or more of the following:

- Total cost of $2,000 or more for property damage but less than $10,000. Property damage includes all government equipment, vehicles, or munitions.
- A nonfatal injury that does not meet the definition of a Class C; and results in less than eight hours lost time (military lost work hour cases are not included). Class D injuries include: loss of consciousness, permanent change of job, or medical treatment greater than first aid. (Examples: Individual losses consciousness from heat stress while working in high temperature environment; civilian is injured, goes to personal physician on same day as injury and returns to duty the next day.)

2.3.4.1. Keep/file Class D ground reports (both civilian and military) at unit level.

2.3.4.2 Report injury cases on AF Form 739, *Occupational Injuries and Illness Log for Civilian Personnel*, or through the ASAP system (paragraphs 4.3.2 and 4.13, figure 4.4).

2.3.5. **Class N and X Events..**

2.3.5.1. Class X Events: An event resulting in one of the following:

- A claim by an appropriated funds US employee or foreign national employee covered by the Federal Employees Compensation Act (FECA) solely for medical treatment costs associated with visits to a doctor's office for medical treatment.
- An occupational injury or illness not reportable, but recordable according to this instruction. Report civilian injury and illness cases on AF Form 739 or through the ASAP system (paragraph 4.3.2 and 4.13).

2.3.5.2. Class N Events. Any non-reportable event that does not meet above class criteria, that the installation safety personnel need to record locally for trend analysis.

★2.3.6. **Mishap Class Changes.** As part of mishap reporting follow-up, see paragraph 6.5 if mishap class upgrades or downgrades are required. Convening authorities must correct mishap costs when the total dollar costs change or when later information (such as actual repair costs) alters the mishap's classification. If after submitting a final report, the mishap classification changes due to cost or injury, submit a status message report.

2.4. Determining Mishap Costs. Determine mishap costs by adding all reportable damage, injury, and illness costs. Report costs even though the US Government is wholly or partially reimbursed. The total cost reported for a mishap includes all direct costs associated with that mishap.

★2.4.1. **Direct costs.** The direct cost of damage to Air Force property shall be computed using the actual costs of repair or replacement, including work hours to repair, or the best official estimates. Direct costs include any damage as a result of the mishap, to include actual costs of all destroyed or damaged property and injuries or illness associated with the mishap. Multiple resources may be damaged or destroyed by a single event, and are therefore reported as a single mishap. For example, explosions, midair collisions, or mishaps involving a flight of aircraft result in separate direct costs that are totaled for classification and reporting purposes. For mishaps involving ground launched missiles, direct costs include the total man-hours missile maintenance personnel spend repairing the damage.

★2.4.2. **Indirect costs.** Includes any cost not directly attributable to the damage of the mishap. If indirect costs are known they should be reported in the narrative of the mishaps report and final message but not used in determining mishap levels. Examples of indirect costs include:

- Transportation costs(which includes time spent disassembling equipment in preparation for shipment)
- TDY
- Per diem
- Time spent setting up maintenance stands or repair equipment
- Supply channel surcharges
- Time spent troubleshooting or inspecting to determine the extent of mishap damage
- Environmental cleanup

★2.4.3. **Damage Cost Methods.** Determine the costs of reportable damage to property, including equipment, facilities, and materiel, resulting from Air Force mishaps by the following methods. For stocklisted items, use costs listed in the Air Force Master Item Identification Database (D043A). Obtain the National Stock Number(s) of the specific items through the unit maintenance or job control office. For Contractor Logistic Support (CLS) maintained items, use the contractor stock number instead of a NSN. Provide the contractor stock number or NSN to the Base Supply Representative for retrieval of the unit price from D043A. If D043A does not contain unit pricing data on the item, contact the Single Manager for the weapon system.

- Acquisition Costs. When property is damaged and will not be repaired or replaced, calculate damage as the acquisition cost plus the cost of all modifications. See AFI 65-503, ***US Air Force Cost and Planning Factors***, Table A10-1 for acquisition (fly-away) costs for entire aircraft. This information can be retrieved off the world wide web at the address (www.saffm.hq.af.mil/SAFFM/FMC/a10-1.html [case sensitive]) or can be obtained from AFMC/FMC, DSN 787-3165 or COMM (513) 257-3165. Contact the AFMC Single Manager for modification costs. Use the Unit Price in D043A for stocklisted equipment unless actual acquisition cost can be documented.
- Replacement Costs. When property is damaged and will be replaced, figure damage as the Unit Price of the replacement property as listed in the Air Force Master Item Identification Database (D043A)
- Repair Costs. When damaged property can be repaired, the damage cost includes both manpower costs and material costs. See paragraph 2.4.6 for details of repair cost accounting methods.

2.4.4. **Reportable Mishap Damage.** Mishap damage is reportable and includes:

- Damage of $10,000 or more from external sources, such as loads, forces, punctures, and fires.
- Damage of $10,000 or more external to a major aircraft system, but resulting from the major system's failure or malfunction. In this case, damage costs include damage to the system that failed or malfunctioned. Use the first two digits of the work unit code to define a major aircraft system. If damage is limited to a single system ("single system failure" in paragraph 2.1.5), it may not be a mishap. For missile, explosives, and ground Class D criteria see paragraphs 8.7, 10.4.6, or 11.4.1.5.

2.4.5. **Damage to Non-Air Force Property.** Determine these costs using the following priority:

- Claims officer's damage statement.
- Official estimates, such as security police reports, civil police reports, and transportation estimates.
- Safety investigator's estimate.

★2.4.6. **Figuring Damage Repair Costs.** The operational commander decides how or where to repair hardware. Calculate cost as follows:

2.4.6.1. For local level repairs, include the cost of the total direct man-hours spent removing, repairing, and installing the damaged item plus the cost of material used in the repair. Direct man-hours are the actual total time spent by all individuals to remove, repair, or replace items of equipment, components, and parts damaged in a mishap. Direct man-hours also include time spent removing and replacing undamaged panels, components, or units to gain access to damaged components. Use $16 per hour for labor. ***NOTE:*** For aircraft under the Contractor Operated and Maintained Base Supply (COMBS) system, calculate the labor repair costs for safety purposes by multiplying contractor man-hours expended by $16.

★2.4.6.2. When damaged equipment is shipped for depot-level repair, figure repair costs using one of the following. (If depot determines the item is not repairable use acquisition or replacement cost per paragraph 2.4.3.)

- When damaged equipment (including an aircraft, but not aircraft engines or other aircraft components) is shipped for depot level repair, damage cost includes the cost of the total direct man-hours spent repairing the damaged item plus the cost of material used in the repair. Direct man-hours are the actual total time spent by all individuals to remove, repair, or replace items of equipment, components, and parts damaged in a mishap. Direct man-hours also include time spent removing and replacing undamaged panels, components, or units to gain access to damaged components. Use $16 per hour for depot labor. For contracted repairs, use actual contracted repair cost.

- When an aircraft engine, engine section, or engine module is shipped for depot level repair (and determined repairable), damage cost is the Exchange Price as listed in D043A.
- When other aircraft components are shipped for depot level repair (and determined repairable), damage cost is 15% of the Unit Price as listed in D043A.

★2.4.6.3. For items repaired by a contractor under warranty, use the cost of repair as if the item was not under warranty.

★2.4.6.4. Do not include the surcharge as supplied from supply channels in figuring mishap costs

2.4.6.5. When munitions or all-up-round components are dropped a distance greater than the technical order limit, the depot may have to do serviceability tests. Estimate the cost at 15 percent of the replacement cost in the current stock catalog. If the item fails the serviceability test, correct the dollar cost to full value in a subsequent status report. If the item passes the serviceability test, do not change the report.

2.4.6.6. Include additional damage caused by fire fighting and rescue operations in mishap damage calculations. Do not include damage occurring during recovery operations; it is a separate mishap. For example, if a crane drops an aircraft while moving it onto a trailer, it is a ground mishap in addition to the initial flight mishap.

2.4.6.7. When items are intentionally jettisoned from aircraft and there is reportable damage or injury, do not include the cost of the jettisoned item in the cost of the mishap. This exclusion does not apply to missiles, drones, rockets, or nonnuclear munitions when their malfunction was the reason for jettison.

★2.4.6.8. When reportable damage occurs to Air Force property in a base facility fire, the local base fire marshal will report loss according to DoDI 6055.7 and AFI 32-2001, *The Fire Protection Operations and Fire Prevention Program.*

2.4.6.9. When damage occurs to Air Force property as a result of nongovernment activities, such as a civilian operated private motor vehicle (PMV) crashing into the base boundary fence, report only Air Force property damage; that is, the fence. Do not report any damage to the PMV or injury to the occupants unless otherwise reportable according to this instruction.

2.4.6.10. When damage occurs to an Air Force government motor vehicle (GMV), use all damage costs to Air Force property and personnel injuries to determine reportability.

★2.4.6.11. If Air Force operations result in damage or injury to non-Air Force property or personnel, include property damage costs or injury classification (fatal, permanent partial, etc.,) whichever is greater, when determining reportability. When determining costs for a properly parked GMV, report only damage to the GMV unless other damage is otherwise reportable under this instruction. GMVs are considered properly parked only when they are in authorized parking areas.

2.4.7. **Standard Injury, Illness, and Fatality Costs.** Determine standard costs for Air Force military and DAF civilian injuries and occupational illness using table 2.1. Amounts depicted are for safety investigative reporting purposes and do not necessarily reflect the actual costs to the Air Force in a specific case.

★2.4.8. **Using Costs To Classify a Mishap.** Estimate the mishap's dollar cost, and classify it, using the best information available. If mishap costs are within 10 percent of the classification threshold costs, MAJCOMs should consider using the higher mishap class. Adjust the first estimate in the final report, based on more exact information. When items sent for depot repair are later determined to be non-repairable, revise cost to use acquisition cost or replacement cost per paragraph 2.4.5. Convening authority must correct mishap costs when per paragraph 2.3.6.

★2.5. Determining Nonnuclear Mishap Class. There are five possible classes: Classes A, B, C, D, and X. Base class on damage or injury, using paragraph 2.3, and select the highest class based upon both total damage and injury criteria. Class D criteria is used for civilian and military on-duty mishaps as well as air-launched missile and explosive incidents. Class X is used only used for civilian on-duty mishaps to track claims which are neither reportable nor recordable. If the mishap does not meet Class A, B, C, D, or X definitions, but still should be reported per paragraph 4.3.3, report it as a HAP.

★2.6. Determining Nonnuclear Mishap Category. There are seven possible nonnuclear categories: aircraft, missile, space, explosives, ground, FOD, and miscellaneous air operations. For the aircraft category, use the terms "flight", "flight-related", “or flight-unmanned vehicle”, depending upon aircraft damage and crewmember status. Some mishaps involve more than one safety category. In those cases, use figure 2.1 to assign the primary category, then add the involvement category (aircraft, missile, space, or explosives) in parentheses.

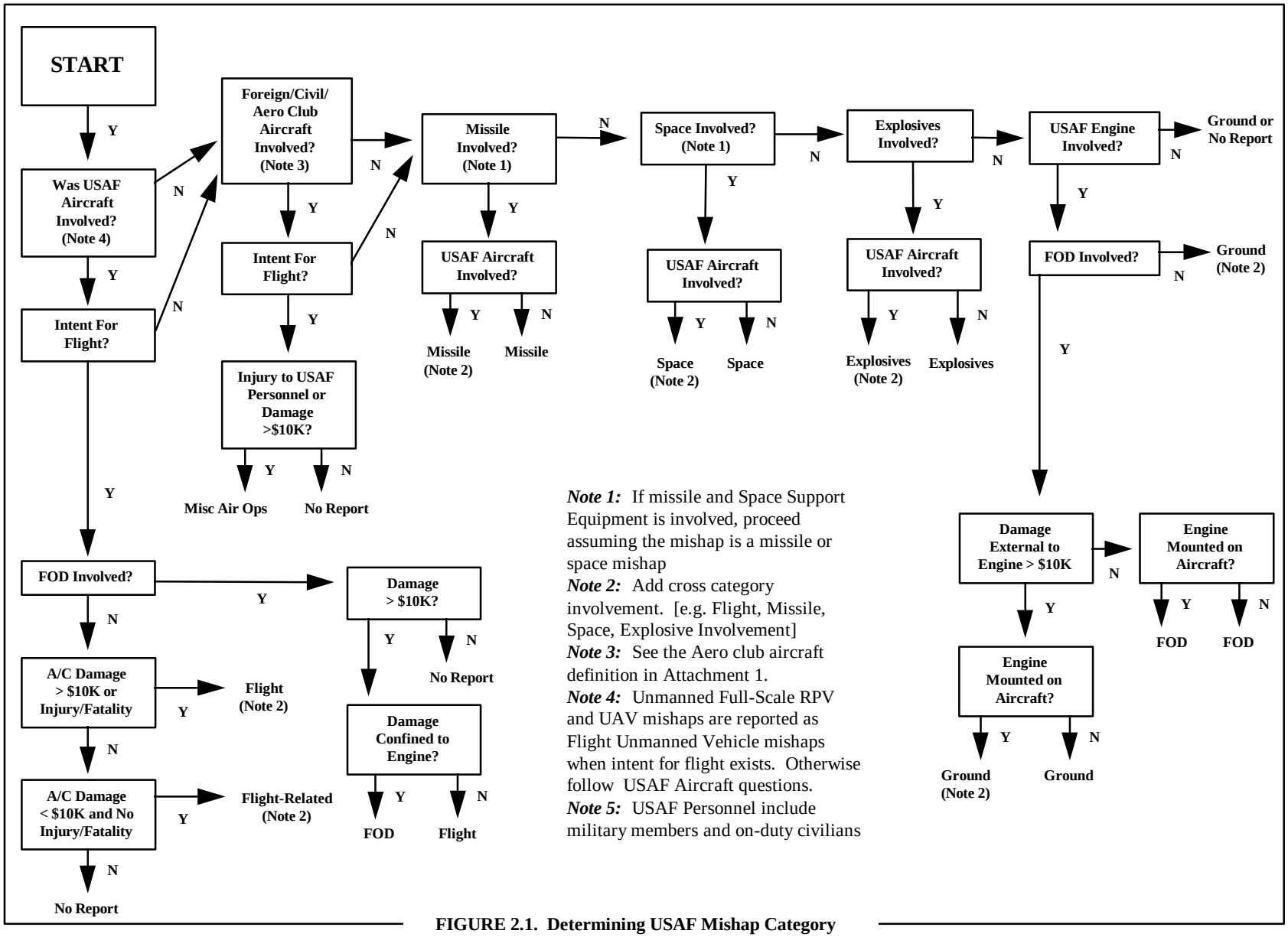

FIGURE 2.1. Determining USAF Mishap Category

Table 2.1. Standard Injury, Illness, and Fatality Costs.

	A	B	C	D	E	F
	Injury or Illness	Rated Officer	Nonrated Officer	Cadet or Enlisted	Civilian Employee	YOP* and Foreign Civilian Employee
1	Fatality	$1,100,000	$395,000	$125,000 (note 1) $270,000 (note 2)	$460,000	$270,000
2	Permanent Total Disability (Note 3)	$1,300,000	$845,000	$500,000	$385,000	$390,000
3	Permanent Partial Disability (Note 3)	$210,000	$145,000	$115,000	$250,000	$180,000
4	Lost Workday	$425/day	$425/day	$375/day	$350/day	$300/day
5	Hospitalized Day (note 4)	$466/day	$466/day	$466/day	$466/day	$466/day
6	No Lost Time	$120/day	$120/day	$120/day	$120/day	$120/day

*Youth Opportunity Program

NOTES:
1. Not on flying status.
2. On flying status.
3. Disability costs include lost workday and hospitalized day costs.
4. Hospitalized day costs include lost workday costs.

Chapter 3

SAFETY INVESTIGATIONS

3.1. Why Conduct Investigations? The Air Force conducts safety investigations to find the causes of mishaps and to prevent recurrence.

3.2. Determining the Scope of Investigations. The following factors influence the scope of investigations: severity of injury or occupational illness, probability of adverse public reaction, future mishap potential, or whether another agency's investigation will produce a report the Air Force can use for mishap prevention. The convening authority determines the depth of investigative effort required for each mishap. When convening authority determine a single investigator can do or finish the job, release the remaining Safety Investigation Board (SIB) members. Use the following guidelines to decide the type of investigation to convene:

3.2.1. **Severity of Injury, Occupational Illness, or Damage.** When resulting from Air Force operations, conduct an extensive investigation. Persons representing several investigative areas may be needed to reconstruct the sequence of events, identify causes, and recommend preventive actions. For complex investigations, commanders normally convene a SIB. When the causes and preventive actions are evident at the outset of the investigation, convening authority may decide to appoint individual investigators, rather than convening a SIB.

3.2.2. **Possible Adverse Public Reaction.** Air Force policy requires the public be kept fully informed of events adverse to the public interest. Part I of SIB investigation reports are often necessary to fully document the circumstances of complex mishaps.

3.2.3. **Mishap Potential.** The potential for mishap recurrence may suggest the need for a more extensive investigation, even though damage, injury, illness, or possible adverse public reaction may be minimal. Convene a SIB for mishaps when it seems extensive documentation is needed to support preventive actions.

3.2.4. **Joint Service Involvement.** Some mishap circumstances involving two or more services may best be investigated through a SIB with multiservice representation, or with individual investigating officers from the appropriate components when a full SIB is not used. The Air Force will cooperate fully in any safety investigative process convened by a unified

command commander in chief (CINC) or service chief. A separate Air Force investigation will not be required, and separate messages or formal reports are not required if appropriate Air Force agencies from this instruction are included as addressees.

3.2.5. **Other Agency Involvement.** Other agencies, such as the local police or National Transportation Safety Board (NTSB), may investigate mishaps occurring outside the direct sphere of Air Force influence. Although safety reporting may be required, an Air Force investigation may not be needed because the necessary information frequently can be taken directly from these other reports.

3.2.6. **OSHA Investigation of US Air Force Occupational Mishaps.** OSHA officials may accompany Air Force safety investigators in an observer status, or they may conduct a separate investigation of occupational mishaps involving either a DoD civilian fatality or a catastrophe in a nonmilitary unique environment resulting in the in-patient hospitalization of three or more personnel.

3.2.6.1. Do not compromise Air Force responsibility for investigation of Air Force mishaps. OSHA investigators observing Air Force investigations or conducting separate investigations may inspect the mishap sites to assess hazardous conditions.

3.2.6.2. Units experiencing a fatal civilian occupational mishap or a mishap involving in-patient hospitalization of three or more civilians can expect, and shall respond to, inquiries from OSHA field offices. Units will immediately notify HQ AFSC/SEG and MAJCOM/SEG if OSHA conducts a separate investigation. At the conclusion of each investigation, the receiving unit will transmit an electronic message report about the OSHA investigation as outlined in AFI 91-301, *The Air Force Occupational Safety, Fire Prevention, and Health Program.*

3.2.7. **Contractor Involvement in Mishaps.** Investigate and report mishaps when operations of government contractors result in reportable Air Force losses even if the government is wholly or partially repaid.

3.2.7.1. If the Air Force administers the contract and mishaps involve reportable losses to Air Force resources, Air Force administrative contract safety personnel prepare the reports with as much information as is available within the terms of the contract.

3.2.7.2. If the Air Force administers the contract and mishaps involve reportable losses to resources of other DoD agencies, Air Force administrative contract safety personnel send all mishap information to the involved agency with an information copy to HQ AFSC/SEC.

3.2.7.3. If another DoD agency administers the contract, the contracting MAJCOM ensures the loss is investigated and reports the mishap according to this instruction.

★3.2.7.4. If the mishap concerns government property in the contractor's possession, the contractor is not required to provide information beyond the terms of the contract. Safety staffs ensure the contract statement of work (SOW) specifies that the contractor will notify the Air Force when property damage occurs.

3.3. Who Funds Investigations?

3.3.1. **Local Support.** The host installation funds all in-house support even if the host installation is not assigned to the investigating MAJCOM.

3.3.2. **TDY Travel.** Each command funds TDY travel of its assigned personnel who are Air Force SIB members or technical experts (see AFI 65-601, volume 1, *Air Force Budget Policies and Procedures*). For joint service boards (paragraph 3.2.4), each service funds its own members' TDY. The investigating MAJCOM funds travel costs of members from another service appointed to an Air Force board (paragraph 3.6.9). Observers to an Air Force board (paragraph 3.6.9.2) fund their TDY.

3.3.3. **Other Support.** The investigating MAJCOM funds leasing of vehicles or special equipment, leased communications, and other contractual services.

3.3.4. **Cost Overruns.** Request an operating budget authority (OBA) adjustment if investigation costs cannot be financed through reprogramming within the OBA. Send requests for OBA adjustments to the Director of the Budget, HQ USAF.

3.4 Mishap Investigation Timeline: In order for mishap investigations to provide effective and timely dissemination of information for mishap prevention, they must be accomplished in a timely manner. All time-line milestones start from the day of the mishap. Thirty days after the mishap the investigation board should be complete with the investigation and have the formal report signed by the Investigator or Safety Investigation Board. Within 15 days the SIB should brief the convening authority briefed, coordinate a command response and the release the final message. If unique circumstances prevent the SIB from meeting the above recommended timeline requirements, the convening authority must request a waiver from HQ USAF/SE.

3.5. Investigating Officer. The term investigating officer includes NCOs and civilians who are appointed to investigate mishaps. During a safety investigation, relieve the investigating officer of all other duties.

3.5.1. **Investigation Officer Selection**. Each Air Force wing, higher headquarters, and geographically-separated unit (GSU) commander appoints one or more investigating officers. ARC unit commanders appoint one or more guardsmen or reservists to investigate mishaps. When a single investigating officer investigates a Class A aircraft, missile, space, nuclear weapon, nuclear reactor, or radiological safety mishap, use the SIB president selection criteria in paragraph 3.6.1.

★3.5.2. **Investigating Officer Qualifications.** Select the investigating officer from the most qualified individuals available, using the criteria below. When a fully qualified individual is not available (for example, if he or she does not have safety experience, formal safety training, an investigation background, or working knowledge of this instruction), the convening authority's safety staff must participate in the investigation and help with the details of compiling the formal report.

- Aircraft mishaps--Select an investigating officer that meets MAJCOM-defined experience criteria. The Investigating Officer will be a graduate of the USAF Flight Safety Officer Course or the USAF Aircraft Mishap Investigation Course. Current or previous qualification in the mishap aircraft is desirable. Safety NCOs and civilians may investigate Class C aircraft mishaps and HAP aircraft events when no operator factor is involved.
- FOD mishaps--Select an investigating officer that meets MAJCOM-defined experience criteria. The Investigating Officer should be a graduate of the USAF Flight Safety Officer Course or the USAF Aircraft Mishap Investigation Course. Current or previous qualification in the mishap aircraft is desirable. Safety NCOs and civilians may investigate Class C aircraft mishaps and HAP aircraft events when no operator factor is involved.
- Missile mishaps--Select a missile maintenance, missile operations, aircraft maintenance officer with munitions expertise, or missile safety officer. For air launched missile or full scale RPV mishaps, the flight safety officer may be the investigating officer.
- Space mishaps--Select a space operations, space systems engineering, missile maintenance, missile operations, or missile system engineering officer.
- Nuclear weapon mishaps--Select a maintenance officer, nuclear surety officer, or officer qualified in storage, maintenance, transportation, operation, or loading and mating of the weapon system involved.
- Nuclear reactor or radiological mishaps--Select a nuclear surety officer who knows the nuclear system or materials and the related hazards involved.
- Ground mishaps--Select a ground safety member (at least GS-9 or E-7 or higher with an AFSC 7-level skill or above) as the single investigating officer or SIB investigating officer for all Class A and B mishaps. The investigator may be from the unit experiencing the mishap. However, if the convening authority determines the investigator should come from outside the organization, appoint an individual senior to the individuals involved in the mishap, either from an unit not involved in the mishap or from the next higher supervisory level of the unit experiencing the mishap.
- Explosives mishaps--Select a maintenance officer with munitions expertise who is trained or experienced in safety investigation and knows the effects and technical aspects of the design, construction, properties, use, and functioning of all items involved.
- Miscellaneous Air Operations mishaps--Select an investigating officer all Class A and B mishaps dependent on the circumstances of the mishap. The convening authority determines the best experience required to investigate this type of mishap. The investigator may be from the unit experiencing the mishap. However, if the convening authority determines the investigator should come from outside the organization, appoint an individual senior to the individuals involved in the mishap, either from an unit not involved in the mishap or from the next higher supervisory level of the unit experiencing the mishap.

★3.6. Safety Investigation Boards (SIB). The SIB member activities prescribed by this instruction take precedence over all other duties. Each Air Force base, wing, and higher level commander will keep a current list of personal qualified for a SIB. List only required basic members. ARC units are not required to maintain lists of potential board members. Upon request from the appropriate ARC safety staff, ARC units will provide qualified individuals to serve on a SIB. Do not establish flight, missile, space, or nuclear SIBs below wing or equivalent level.

★3.6.1. **SIB President Qualifications.** For Class A flight, flight-related, flight unmanned vehicle, missile, and space mishaps, and nuclear accidents:

- Appoint from outside the wing or equivalent organization having the mishap.
- The SIB President will be a graduate of the HQ AFSC Board President Course prior to his or her appointment.

3.6.2. **SIB Operation and Composition (General).** AFI 51-602, *Boards of Officers*, does not apply.

3.6.2.1. The size and membership of the SIB depend on the kind of mishap being investigated. Paragraphs 3.6.3 through 3.6.8 describe basic SIB membership for most types of mishaps. Convening authority may organize a group SIB for more complex mishaps in any way fitting their investigative and reporting needs.

3.6.2.2. Select one or more SIB members equal to or senior in rank to the senior person directly involved in the mishap. Normally, the SIB president is the senior SIB member.
3.6.2.3. Select SIB members who do not have a personal interest in the investigation and are able to act impartially.
3.6.2.4. Select a SIB member qualified in safety investigation for each safety discipline involved in the mishap.

3.6.2.5. The system program director (SPD) or item manager (IM) and any involved test organization may decide to take part in the investigation. Inform the investigating MAJCOM commander, preferably within 24 hours after the mishap, if participating in the investigation.
★3.6.2.6. The SIB president is the final point of release for all information from the board and as such the SIB president is the final decision point for all finding, causes, and recommendations.
★3.6.2.7. A "primary member" is a person authorized to have an equal voice with all other primary members to determine findings, causes, recommendations, and is authorized to submit a minority report.
3.6.3. **Flight, Flight-Related, and Flight Unmanned Vehicle SIBs:**
3.6.3.1. SIB President, a pilot or navigator. For Class A mishaps, use a colonel or higher ranking officer.
3.6.3.2. Required Primary Members:

- Investigating Officer (paragraph 3.5.2).
- HQ AFSC Representative
- Pilot Member, currently on flying status and qualified in the mishap aircraft.
- UAV Air Vehicle Operator, qualified in the mishap aircraft, if UAV involved.
- Maintenance Member, a fully qualified maintenance officer or senior NCO with two years maintenance experience in the mishap aircraft if available. A graduate of HQ AFSC's Aircraft Mishap Investigation Course or AETC's Jet Engine Mishap Investigation Course is mandatory.
- Medical Officer, an Air Force flight surgeon or physician qualified in aerospace medicine.

★3.6.3.3. Additional Primary Members:

- Air Traffic Control (ATC) Officer or senior NCO, if air traffic control is known or suspected to have been a factor in the mishap. The convening authority coordinates with Air Force Flight Standards Agency (HQ AFFSA/XV), DSN 858-2177, to select an air traffic control officer if not available within the command.
- Weather Officer, if weather or weather service is known or suspected to have been a factor in the mishap.
- Weapons Safety Manager, if a nuclear weapon or warhead is involved. Select a fully qualified maintenance officer with munitions experience, EOD officer or NCO, or nuclear safety officer.
- Nuclear Expert, if nuclear reactors, nuclear power systems, or radioactive sources are involved.
- Air Force Operational Test and Evaluation Center (AFOTEC) Representative, if AFOTEC-managed operational test and evaluation (OT&E) procedures or equipment are involved.
- Life Support Officer or NCO, if life support equipment is known or suspected to have been a factor in the mishap or may have contributed to injuries. Life Support members must be graduates of HQ AETC's Aircrew Life Support Officer's Course, S-V8G-A, or the one-week mishap investigation portion of that course.
- Jumpmaster, if mishap involved personnel airdrop operations.
- UAV Mission Commander, if UAV is involved. Select a fully qualified mission command with experience with that model of UAV.

3.6.3.4. Required Nonprimary Members:

- SIB Recorder, an officer or senior NCO familiar with administrative procedures.
- Representatives of the aircraft (SPD or IM) or Air Force test organization, if these organizations participate.
- Representatives from the FAA or NTSB if appropriate. See paragraph 3.6.10 and AFJI 91-206.
- Safety Advisor, if a trained safety officer is not already a member of the SIB.

★3.6.3.5. Additional Nonprimary Members at the Convening Authority's Option:

- Additional crewmembers (navigator, loadmaster, etc.) qualified in the mishap aircraft.
- Commander's Representative, if the commander whose aircraft or operator was involved in the mishap requests.
- ATC Officer, if not already required.
- Air Force Flight Standards Agency (AFFSA) representative, if instrument flight procedures or publications are involved. The convening commander coordinates with AFFSA/XO, Andrews AFB MD 20331-7002, DSN 858-4702.
- Technical personnel with expertise in specific systems or human factors issues.

- Representatives of other services (paragraph 3.6.9).

3.6.4. **Missile SIBs:**

3.6.4.1. SIB President. Normally a colonel for Class A mishaps.

3.6.4.2. Required Primary Members:

- Investigating Officer (paragraph 3.5.2).
- HQ AFSC Representative
- Missile Operations Officer, qualified in the operational use of the missile system.
- Missile Materiel Officer qualified in missile maintenance, engineering, or munitions.
- Medical Officer qualified in aerospace medicine if personnel are directly involved in the mishap or personnel injury occurs. Another officer qualified in missile maintenance and engineering may be used in place of the medical member if no human factors issues arise during the investigation.

3.6.4.3. Additional Primary Members. Same as flight SIB.

3.6.4.4. Required Nonprimary Members:

- Representatives of the missile system manager, IM, or Air Force test organization, if these organizations decide to participate.
- Weapons Safety Manager

3.6.4.5. Additional Nonprimary Members at the convening authority's Option. See flight SIB for other potential members.

- Representatives from other federal agencies, as advisors or consultants.
- Technical personnel with expertise in specific systems or human factors.
- Additional members as desired.

3.6.5. **Space SIBs:**

★3.6.5.1. SIB President. Normally a colonel with a space and/or missile experience, for all Class A mishaps.

★3.6.5.2. Required Primary Members:

- Investigating Officer (paragraph 3.5.2).
- HQ AFSC Representative
- Space Operations Officer qualified in the operational use of the space system.
- Space Materiel Officer (space or missile engineer or a missile maintenance officer).
- Medical Officer qualified in aerospace medicine if personnel are directly involved in the mishap or personnel injury occurs. Another officer qualified in missile maintenance or space engineering may be used in place of the medical member if no human factors issues arise during the investigation.

3.6.5.3. Additional Primary Members. Same as flight SIB, except AFSPC will provide a primary member to space mishap boards if launch center, flight termination system, or range safety issues are involved in the mishap.

3.6.5.4. Required Nonprimary Members:

- Representatives of the space system manager, IM, or Air Force test organization, if these organizations decide to participate.
- Space Safety Officer, if a trained space safety officer or specialist is not already a member.

3.6.5.5. Additional Nonprimary Members (if desired). See flight SIB for other potential members.

- Representatives from other Federal agencies, as advisors or consultants.
- Technical personnel, with expertise in specific systems.

3.6.5.6. Additional Members (if desired).

3.6.6. **Nuclear Weapon Mishap SIBs:**

★3.6.6.1. SIB President. Normally a colonel for all nuclear accidents.

★3.6.6.2. Required Primary Members:

- Investigating Officer (paragraph 3.5.2).
- HQ AFSC Representative
- Officer qualified in the operation of the nuclear weapon carrier, if the carrier was involved.
- Aircraft or missile maintenance officer qualified in storage, maintenance, transportation, or loading and mating of the weapon system.
- Nuclear Surety Officer.

3.6.6.3. Additional Primary Members:

- Department of Energy (DOE) Representative. If DOE-DoD agreements apply for the system involved, use a DOE representative.
- Medical Officer for human factors and other medical aspects (if applicable).
- Additional specialists, if required by the nature of the mishap.
- Additional members (same as flight or missile SIBs).

3.6.6.4. Required Nonprimary Members (same as flight or missile SIBs).

3.6.7. **Nuclear Reactor or Radiological Mishap SIBs:**

★3.6.7.1. SIB President. Normally a colonel for all nuclear accidents.

★3.6.7.2. Required Primary Members:

- Investigating Officer (paragraph 3.5.2).
- HQ AFSC Representative
- Nuclear Expert knowledgeable of the reactor or radioisotope system.
- Medical Officer or health physicist knowledgeable in radiation effects and contamination.
- Nuclear Surety Officer.

3.6.7.3. Additional Primary Members:

- DOE Representative, if DOE-DoD agreements apply for the system involved.
- Medical Officer for human factors and other medical aspects.
- Additional specialists, if required by the nature of the mishap.
- Additional members (same as flight or missile SIBs).

3.6.7.4. Required Nonprimary Members (same as flight SIBs).

3.6.8. **Ground, Explosives, and Aircraft Involvement SIBs:**

★3.6.8.1. SIB President; Colonel or GM-15 (or higher) for Class A on-duty mishaps; or major or GS-12 (or higher) for other mishaps.

★3.6.8.2. Required Primary Members:

- Investigating Officer (paragraph 3.5.2).
- HQ AFSC Representative (when requested by the MAJCOM or Board President)

3.6.8.3. Additional Primary Members:

- Medical Officer, if medical factors are involved.
- Bio-environmental Engineer if bio-environmental health factors are involved.
- Vehicle Maintenance Officer, if a motor vehicle is involved.
- Munitions or Explosives Officer. If applicable, use a fully qualified maintenance officer or NCO with munitions experience who is familiar with the design, construction, properties, use, and functioning of all involved explosives items.
- AFOTEC Representative, if AFOTEC-managed OT&E is involved.
- Security Police Law Enforcement Officer, if a motor vehicle is involved in the mishap.
- Fire Protection Specialist (at least E-7 or GS-9), if the mishap is the result of a fire.

3.6.8.4. Required Nonprimary Member: SIB Recorder, a junior officer or NCO familiar with administrative procedures.

3.6.8.5. Additional Nonprimary Members (as desired):

- Other technical personnel, depending on the nature of the mishap.
- Other personnel (same as flight SIB).

3.6.9. **Using Interservice Personnel in SIBs.** The following procedures apply for safety investigations convened by the Air Force. When "joint" investigation is specifically required, the Chief of Safety works with the other services IAW the *Memorandum of Understanding (MOU) Governing Joint Investigation of Mishaps* (effective 20 Apr 93).

3.6.9.1. The USN, USA, and USCG normally take part in Air Force SIBs when their aircraft, facilities, materiel, or personnel are involved. The convening commander will request approval from HQ AFSC to use other military service personnel. If granted, the non-Air Force members actively participate in the investigation and aid in report preparation. The investigating MAJCOM determines whether they will be primary members. Send an extra copy of the report to HQ AFSC/SEC for forwarding to the other service involved.

3.6.9.2. Sometimes a mishap involves weapon systems or equipment common to another US military service. In these cases personnel from the other service may request to observe the Air Force investigation as nonprimary members. HQ AFSC forwards these requests to the convening authority. An observer is not a member of the Air Force SIB. Send an extra copy of the report to HQ AFSC/SEC for forwarding to the other service.

3.6.9.3. Do not assign foreign exchange officers or other officers serving with Air Force forces as formal SIB members. This exclusion does not apply to HQ AFSC representatives discussed in paragraph 1.2.2.3. Comply with provisions in standing international agreements.

3.6.10. **Cooperating With the NTSB or FAA:**

3.6.10.1. The NTSB investigates mishaps between Air Force and civil aircraft. The NTSB permits Air Force participation at the discretion of HQ USAF/SE (see AFJI 91-206). If the Air Force takes part in such an investigation or public hearing, it does so as "a party to" the investigation or hearing. The Air Force may conduct a separate and independent investigation; however, the Air Force investigation must not interfere with the NTSB investigation. The Air Force SIB president complies with AFJI 91-206 and paragraph 7.4.12 when exchanging information with the NTSB.

3.6.10.2. When a military flight mishap involves a function of the FAA, the convening authority will allow the FAA to participate in the military investigation (see AFJI 91-206**)**.

3.6.10.3. Cooperation between NTSB and FAA and the Air Force in these investigations is essential. If the military investigation referred to above conclude FAA personnel or facilities were causal in the mishap, comply with AFJI 91-206.

3.7. Using Investigative Evidence:

3.7.1. **Impounding Air Force Materiel.** SIBs and single investigators have inherent priorities over other activities and investigations connected to the mishap, including the right to impound Air Force property involved in the mishap. Group commanders or higher will need to act on their impoundment requests. However, rescue of personnel and safing of hazardous materials always take precedence over safety investigations, even at the risk of losing evidence. An installation commander may also choose to remove wreckage interfering with important mission activities or causing a hazard at the mishap scene.

3.7.2. **Human Factors Evidence.** This includes evidence of mental and physical capability and medical opinion about the capability of individuals to return to their duties. When human remains are not on federal property, consult the mortuary officer of the supporting base to determine if civil authorities have jurisdiction. The mortuary officer should have a memorandum of understanding with civil authorities according to AFI 34-501, Mortuary Affairs Program.

3.7.3. **Photographs.** Still photography, film, and videotape can preserve otherwise perishable evidence and aid the investigation. Photograph liberally, but be selective when including photographs in the report.

3.7.4. **Electronically Stored Data.** This includes crash survivable memory units in flight data recorders (FDR), electronic cockpit voice recorders (CVRs), and nonvolatile memory (NVM) chips on circuit cards from electronic engine controls, programmable navigation equipment, and other avionics. Take great care in handling and analyzing these components:

- Ensure all electrical power, including external power, is disconnected from the aircraft as soon as possible.
- If the recording device or other component is immersed in water (salt or fresh), store and transport them, fully immersed, in the same type of water until it is delivered for data download or decompression.
- Store items in static-safe plastic bags.
- Do not attempt to disassemble or apply power to electrical components, and do not handle the connectors or cannon plugs. Cut the wires upstream of the connectors rather than opening them.
- The Mishap Analysis and Animation Facility (MAAF) at Tinker AFB, OK (formerly OC-ALC/TILO) is the central Air Force activity for recovery, transcription, and analysis of FDR data in support of Air Force safety investigations. Contractor assistance may be required if investigation requirements exceed MAAF capabilities. HQ AFSC/SEF will provide guidance on the correct routing, handling, downloading, and analysis of recorded flight data.
- Any processing based upon privileged information or involving board deliberation renders those portions nonreleasable. When avionics system or recorder original manufacturers are the only sources capable of extracting data from a particular item, they should also provide data transcriptions without analysis that can be independently processed by other sources for SIB use.

3.7.5. **Witnesses.** Physical and documentary evidence are usually the most credible forms of evidence, but witness accounts often provide important leads. Witnesses include those involved in the mishap, those who saw it, and those whose training and experience qualify them as experts. Use the following guidelines for witnesses appearing before an investigator or SIB:

- Do not administer truth serums, hypnotic techniques, drugs, or polygraph tests. If a witness provides a statement under medication, add a notation to their statement.
- Do not have witnesses testify under oath or give sworn testimony. Ensure witnesses understand that they are obliged to give honest, good faith testimony.
- Advise witnesses in all privileged safety investigations of the purpose and privileged nature of the investigation before they testify. Use figure 5.1 as a guide. Do not advise witnesses of their Article 31, UCMJ, or 5th Amendment rights.

- Advise witnesses in other safety investigations (ground, explosives, FOD, and miscellaneous air operations) of the main purpose of the investigation. Do not guarantee confidentiality because the claim of privilege does not apply to these safety reports. See paragraphs 1.12 and 1.13 for permissible uses and the various types of safety investigations.
- The sole purpose of investigations and reports is mishap prevention. If Air Force personnel, questioned in the investigation, may be guilty of intentional misconduct, refer to paragraph 3.11.
- The primary purpose of investigations producing non-privileged reports is mishap prevention. Do not offer protection beyond this assertion to Air Force personnel involved in investigations producing non-privileged reports. Safety investigators producing non-privileged reports should consult the base SJA before interviewing someone suspected of criminal misconduct. Criminal investigators must know if the safety investigators conduct an interview without rights advisement. Sometimes a safety interview should be delayed pending criminal investigation.

3.7.5.1 Retaining Access to Participants. Safety investigators may need frequent access to, or multiple interviews with, participants in a mishap. Commanders will make all participants available to investigators upon request of the board president/single investigating officer (IO). The Board president/single IO will advise the commander when participants are no longer needed.

3.7.5.2 Returning Participants to Duty. Safety investigators make no determinations regarding the fitness of participants to be returned to normal duties. Commanders must decide how and when participants are to be managed once their testimony is no longer needed by investigators.

★3.7.6. **Disposing of Evidence.** Keep all evidence that is not turned over to the AFI 51-503 board for storage until after the final message has been completed and released. Do not destroy documentation until the final message is released.

★3.7.6.1. Keep Air Force equipment that is damaged beyond repair until all investigators indicate it is no longer needed. Dispose of it in one of the following ways:

- Forward exhibits supporting tear down report (TDR) requests and laboratory evaluations according to paragraph 3.9. Provide post-TDR disposition instructions for all hardware sent for TDR. Refer to AFI 23-101, *Air Force Centrally Managed Equipment* and the proper environmental laws. For hardware involved in potential litigation, refer to paragraph 3.8.2.1.
- If there is an AFI 51-503 investigation, turn the wreckage over to the accident investigator through the convening authority. Ensure the accident investigator knows the wreckage is available and acknowledges custodial responsibility. Tell the host commander of the transfer. If the accident investigator does not need the wreckage, turn it in for salvage. ***NOTE:*** Non-salvageable wreckage is normally kept for a period of two years. At the end of that period, the local base JA will request release of the material from HQ USAF/JACT. Upon approval, the wreckage will be turned over to DRMO for disposal. If there is no available accident investigator when the SIB is prepared to release the wreckage, release the wreckage to the staff judge advocate the nearest Air Force installation who will maintain custody until the accident investigator is able to accept it.
- Release wreckage not needed in support of depot, laboratory, or accident investigation to the commander for salvage (paragraph 3.8). Dispose of lost, damaged, or destroyed property according to AFI 23-101 and the proper environmental laws. Before deciding whether the basic airframe is damaged beyond repair, contact the prime center for the aircraft and allow them to survey the wreckage. Expensive high tempered steel (such as D6AC) and other components often survive and can be repaired.

3.7.6.2. Return Air Force equipment not damaged beyond repair to the possessing organization as soon as possible.

3.7.6.3. Provide all nonprivileged evidence to the AFI 51-503 Accident Investigation Board (paragraph 1.13.3). If there is no AFI 51-503 investigation and HQ USAF/JA has not notified the SIB of special needs, coordinate with HQ AFLSA/JACT, through the Staff Judge Advocate, to determine whether any discovery requests pertaining to evidence in the hands of the SIB have been directed to the Air Force. If there are no such requests, reproduce enough copies for the safety report and then return the original documents and records used by the SIB to their proper custodian.

3.7.6.3.1. Carefully control privileged documentary evidence. This includes:

- Witness statements and testimony.
- Anything acquired from contractor representatives under a promise of confidentiality.
- Drafts indicating SIB analysis and conclusions.
- Privileged photographs, films, and videotapes (including staged, reconstructed, or simulated reenactments of possible or probable scenarios developed by or for the SIB).
- Diagrams and other exhibits.

NOTE: See paragraphs 5.5.1.13.2, 5.5.1.17.4, and 5.5.2.1.2 for photograph, videotape, and simulation disposition instructions.

3.7.6.3.2. Include documents generated by the SIB in Part II of the report or destroy them along with any excess privileged materials not needed for the formal report. Destroy SIB internal working papers. If there is a need to retain any document for briefing purposes, place all such documents in a folder marked as SIB privileged investigation materials, maintain it under seal until no longer needed, and then destroy it. Destroy information stored electronically in a computer or word processor (paragraph 5.10).
3.7.6.4. Return usable personal equipment or protective gear to surviving possessors of record or to the issuing authority, subject to the prior needs of the SIB and AIB. Clearly mark the item to indicate its involvement in a mishap to ensure the necessary inspections are accomplished prior to reissue.
3.7.6.5. Quickly analyze personal items impounded as investigative evidence, and return them to the owner, summary court officer, or next of kin. Contact HQ AFSC/JA for assistance if necessary.
3.7.6.6. Instruct medical members on the disposition of autopsy reports, TOX test results, and human remains photos.

3.8. Recovering and Disposing of Wreckage. Investigators advise the appropriate authorities when all required evidence has been obtained according to paragraph 3.7.
3.8.1. **Assisting Wreckage Recovery.** Investigators may request wreckage recovery assistance from the nearest military base through the convening authority.
3.8.2. **Removing Wreckage from the Mishap Scene.** Do not destroy or remove wreckage without the agreement of the SIB and AIB except for essential rescue or to prevent interference with air operations or vital civil functions. When the SIB and AIB have no further need for wreckage at the scene, the convening authority ensures removal. Police the scene for evidence of human remains and parts of aircraft, explosives, missiles, vehicles, weapons, and composite fiber material. The convening authority retains the wreckage if additional investigation, testing, or study of the wreckage is needed.
3.8.2.1. Potential Litigation. When the wreckage is no longer needed for safety investigation requirements, transfer custody to the supporting SJA through the AFI 51-503 accident investigator.
3.8.2.2. Wreckage in Populated Areas. If wreckage falls into populated areas, the convening authority or the nearest Air Force installation commander determines whether prompt removal is the best course of action. In questionable cases, consult with HQ AFSC.
3.8.2.3. Submerged Wreckage. If recovery or salvage of submerged wreckage is required but is beyond the capabilities of the base concerned, the convening authority may request help from the US Navy, as follows:
3.8.2.3.1. Contact the Commander, Naval Sea Systems Command, Attn.: Supervisor of Salvage (CODE OOC), DSN 327-2758, or commercial (703) 607-2758. For an after-hours duty officer, call (703) 602-7527 and include the following information:

- Exact location of wreckage if known.
- Whether wreckage is marked by buoy.
- Type of ordnance on board aircraft or space vehicle, if any.
- Whether classified material is on board aircraft or space vehicle.
- A statement that funding for travel, per diem, salaries, and contractual support will be provided by separate correspondence. Funding must be identified for the Supervisor of Salvage to mobilize resources.

3.8.2.3.2. Follow up telephone requests with a message to: CNO WASHINGTON DC//N31/N889// with an information copy to: COMNAVSEASYSCOM WASHINGTON DC//OOC// per instructions given by the Supervisor of Salvage. In addition send an information copy to:

- The commandant of applicable naval district.
- The cognizant fleet commander if outside the CONUS. For Pacific areas, use CINCPACFLT, Far East, Commander Seventh Fleet. For Atlantic areas, use CINCLANTFLT, Norfolk, VA. For European and Middle East areas, use CINCUSNAVEUR.

3.8.2.4. Explosives. The convening authority is responsible for cleanup, rehabilitation, and security of the area until relieved by higher authority or the organization having physical possession of the component at the time of the mishap (see AFI 32-4001, *Disaster Preparedness Planning and Operations*). Request additional assistance from:

- The 75 CEG/CED, Hill AFB UT 84056-5912, DSN 777-5501, commercial number (801) 777-5501, if explosive ordnance disposal (EOD) is required.
- The Air Force Operations Center, Washington DC 20330-1480, DSN 227- 6103, commercial (202) 697-6103, if additional technical advice or medical assistance is required.
- The Munitions Rapid Response Team with personnel knowledgeable in munitions areas is available to support MAJCOMs whenever there is a problem. This team can be activated to respond within 24 to 48 hours. If a base has an incident please notify OO-ALC/LIW and we will support you in every way possible. During working hours call DSN

777-5156, 5053, 5055, or 4865. Off duty hours you may contact Hill AFB command post at DSN 777-3007 or commercial (801) 777-3007.

3.8.3. **Obliterating or Marking Wreckage.** All reasonable actions must be made to remove and properly dispose of wreckage. Obliterate or mark all wreckage not removed from the mishap scene, according to one of the following procedures, in the order of preference:

3.8.3.1. Dismantle the wreckage as much as possible and bury the residue when terrain accessibility and laws permit.

3.8.3.2. Have qualified EOD personnel explosively demolish the wreckage to scatter parts in small pieces over the widest area possible, using established procedures. Coordinate with the responsible civil authorities and take care to prevent forest fires or damage to public or private property.

3.8.3.3. Mark all wreckage with a large and conspicuous yellow painted cross. Give the exact location of the wreckage by coordinates, together with photographs showing configuration of wreckage, to the Air Force Rescue Coordination Center.

3.8.3.4. If wreckage is so inaccessible the standard demolition or painting methods cannot be used, carefully plot and photograph it from as low an altitude as practical. Provide the exact wreckage coordinates and photographs showing the wreckage configuration to air search activities and the Air Force Rescue Coordination Center, Langley AFB VA 23665-2789, DSN 574-8112, commercial (800) 851-3051. ***NOTE:*** Abandoning wreckage as explained above does not mean legally abandoning of title. Action to give up title is governed by AFI 23-101.

3.9. Investigating Equipment Failure, Malfunction, or Inadequate Design. Three procedures are generally available for determining the reason for equipment failure or malfunction: local investigation, technical assistance according to paragraph 3.10, or priority teardown deficiency report (TDR). TDRs are part of the US Air Force Product Improvement Program and Materiel Deficiency Reporting System described in AFI 21-102, *Depot Maintenance Management*, and TO 00-35D-54. Request priority TDRs through the SPD, IM, or equivalent, by submitting deficiency reports (DR). If a TDR is requested, do not attempt field disassembly of the exhibit. Use a DR if materiel deficiency is known or suspected or when a TDR is needed, but failure is not suspected.

3.9.1. The SIB or investigator sends DRs for materiel deficiencies known or suspected to be factors in the mishap. Ensure exhibits are kept and shipped as instructed and make notification of shipment. Ensure the mishap event number is referenced in the DR subject line. Take follow-up action to ensure exhibits were received and TDRs are in progress.

- A safety DR may be prepared and sent by the maintenance member of the SIB. Include final disposition instructions for the exhibit if possible.
- Handle exhibits to be shipped for TDR according to TO 00-35D-54. TO 00-85-20, *Engine Shipping Instructions*, tells how to mark engines for TDR.
- When an engine or equipment is sent for TDR due to personnel ingestion, the field investigator, in conjunction with local mortuary affairs and the chief of maintenance, makes every effort to remove human remains from the exhibit before shipment. Ensure the shipping documents are marked according to TO 00-35D-54 and attach a prominent marking indicating the engine or equipment was involved in a personnel ingestion mishap.

3.9.2. A Class C safety report and a DR may be combined according to TO 00-35D-54 when the only cause of the mishap was materiel failure, malfunction, or design deficiency. Do not submit combined reports when there is personnel involvement or when reportable injuries are sustained in the mishap. These reports are *not* privileged or designated as privileged reports even though their subjects may be aircraft, missile, or nuclear mishaps. When combined Class C ground safety and DR message reports are submitted, do not use the consolidated message report format. Instead, use the TO 00-35D-54 format. Do not mark combined reports "FOUO."

3.9.3. The investigating MAJCOM takes follow-up action if the final safety report was sent before receipt of all TDRs. If final exhibit disposition instructions were not included in the original request for TDR, provide them to the SPD or IM.

3.9.4. AFMC responds to requests for priority TDRs as required by AFI 21-102, TO 00-35D-54, and command directives. Do not dispose of exhibits sent for priority TDR without written approval of the convening authority. Hold exhibits for a minimum of 1 year following TDR before disposal. Furnish a preliminary report of priority TDR findings to the field investigator as soon as possible to help with compiling the final safety report. Include the mishap event number (paragraph 4.8.2) in TDRs related to Air Force mishaps. Distribute TDRs as follows:

- One copy to HQ AFSC/SEC. Attach all supporting documents (such as metallurgical analyses, photographs, and test reports) to this copy. For Class A and B and nuclear mishaps, provide the documents as soon as they are available. If the TDR and supporting documents were not previously sent, they may be attached to the Air Logistics Center (ALC) or Product Center (PCTR) endorsement. For HAP events, send the TDR upon completion. Include the mishap event number from the safety message report.
- One copy to the organization requesting the TDR. If the SIB has forwarded its final report, send this copy to the investigating MAJCOM.

- One copy to the MAJCOM possessing (or gaining) the aircraft. Send an additional copy to ANGRC/SE for ANG mishaps and HQ AFRES/SE for AFRES mishaps.
- One copy to the Aeronautical Systems Center (ASC/SEF**)**, 2060 Monahan Way, Wright Patterson AFB OH 45433-7205, if the mishap involved an aircraft or nonspace vehicle. For missiles other than ballistic missiles, send one copy to ASC if required by table 5.2.
- One copy to the Space and Missile Systems Center (SMC/AXZ), 160 Skynet St, Ste 2315, Los Angeles AFB CA 90245-4683, if the mishap involved a system or component used by a ballistic missile or space launch vehicle.
- One copy to the SPD with engineering authority for the system or item in question.
- One copy to HQ AFMC/SE for all Class A and B mishaps.

3.10. Using Expert Technical Assistance. The field investigator needs to consider all factors influencing the mishap and survival sequences. Early evidence may eliminate many possible factors that should not be pursued. When investigating factors beyond the expertise of the appointed investigators, request technical assistance. At this point, discontinue further processing of the evidence, such as disassembling components, until a specialist arrives. If items are to be sent to a laboratory, handle them only as instructed by the analyzing agency. Ensure the Air Force maintains custody of all materials. After analysis, the SIB accounts for all materials and analyses.

★3.10.1. **Requesting Technical Assistance.** Requests for technical assistance to safety investigations are routed through MAJCOM channels to HQ AFSC/SEF (DSN 246-5867, COMM (505) 846-5867). Address Message: HQ AFSC Kirtland AFB NM//SEF//. Outside normal duty hours , phone the Kirtland AFB command post at DSN 246-6432 and ask for the HQ AFSC Safety Duty Officer. SIBs with HQ AFSC representation may directly request technical assistance. For National Guard support contact ANGRC/SE (DSN 278-8524, COMM (301) 836-8524).

3.10.1.1. In response to valid requests for assistance, HQ AFSC determines the best available source for the assistance. HQ AFSC/SEF will arrange for specialists to contact the SIB Investigating Officer or single investigator. Funding and travel arrangements are the responsibility of responding specialists or agencies.

3.10.1.2. Overseas commands may use technical assistance available within their own resources in the overseas area without HQ AFSC coordination, but coordinate with HQ AFSC for assistance from CONUS sources.

★3.10.2. **Using Technical Specialists.** When technical specialists support an investigation, they are under the control and authority of the Single Investigator, SIB president, or investigating officer. This applies to DoD military and civilian personnel as well as contractor and manufacturer representatives. If contractor or manufacturer representatives will produce a report for Part II of the formal report, the SIB president may elect to have a DoD, PCTR, or ALC specialist also provides a Tab J technical analysis for Part I of the formal report. The SIB president, may, in his discretion, promise a contractor representative confidentiality in the preparation of an engineering analysis if necessary to avoid a potential conflict of interest for the contractor, protect proprietary information, ensure cooperation in light of potential litigation, or any other valid need for privilege.

3.10.2.1. When technical specialists complete their investigations, they are expected to report results of their work to the safety investigators. These reports may be written or oral. Place reports submitted by DoD personnel in Part I of the formal safety report. Also include reports submitted by personnel under contract to an ALC, PCTR, or DoD agency.

3.10.2.2. In instances when an ALC, PCTR, or assigned contractor representative is required to provide an opinion to the SIB about the cause of a mishap, give this information separately to the SIB, and include it in Part II of the safety report.

3.10.2.3. In all cases use the format in figure 3.1 for Part I reports submitted by ALC, DoD, PCTR, or assigned contractor personnel. Review these reports to ensure they do not contain references to privileged sources such as pilot, crew member, or operator testimony, or materials provided by contractors under a promise of confidentiality.

3.10.2.4. Place reports submitted by representatives of contractors who design, manufacture, or maintain equipment involved in a mishap in Part I (Tab J) of the formal safety report, if provided without a promise of confidentiality. Privileged contractor reports are placed in Part II (Tab W). Presidents ensure a memorandum of acknowledgment on protection of privileged data is prepared according to figure 3.2 and endorsed by all contractor personnel offered confidentiality.

3.11. Investigating Potential Criminal Acts (Including Sabotage). If safety investigators discover by any means that the mishap was caused by misconduct, they must immediately suspend the investigation and report this fact to the convening authority. The convening authority will, with HQ USAF/SE, determine whether the safety investigation should continue or terminate, and ensure that an appropriate criminal investigation is initiated. If this happens, safety investigators must not disclose any privileged information to the criminal investigators, but they should remain in close coordination with the servicing SJA and OSI to ensure there is no conflict between their respective investigations. To obtain legal counsel on this issue, safety investigators should contact HQ AFSC/JA.

3.11.1. If the convening authority decides to terminate the safety investigation, investigators will give all nonprivileged material to the criminal investigators and provide them with the names of all known witnesses. Alert them if the witnesses have been interviewed by the SIB. The president of the SIB will ensure all privileged information is safeguarded and preserved with the help of HQ AFSC/JA. Notify previous message addressees of the change in investigative responsibility.
3.11.2. If the criminal investigators conclude that the injury or damage is the result of a criminal act, the event may not involve a mishap (paragraphs 2.1.12 and 2.1.13). If a criminal act did not occur, HQ USAF/SE determines whether a mishap occurred and whether a safety investigation is required.

3.12. Writing the Narrative. The factual summary of circumstances portion of a formal report (Part I, Tab A) explains how the mishap occurred. The narrative portion of the formal report (Part II, Tab T) explains why it happened.
3.12.1. **Contents of the Narrative.** The narrative for all mishap categories includes five major areas: brief synopsis or narrative of the mishap, investigation and analysis, findings, causes, and recommendations. Include a sixth major area--history of flight--in formal reports of flight, flight-related, or flight unmanned vehicle mishaps if the factual summary of circumstances in Part I needs amplifying. (History of flight may also be appropriate in miscellaneous air operations mishaps.) Clearly show the scope of the investigation (evidence examined) and analyze the evidence presented (thought process and conclusions). Explain why certain possibilities are eliminated, but others are retained.
3.12.2. **Identifying Involved Personnel.** Do not identify involved personnel by name or call sign in the narrative. Instead, use such terms as "the flight lead," or "the crane operator." "Involved personnel" are those personnel who had an active role in the mishap, were injured in it, or whose actions or inactions initiated or sustained the mishap sequence. For ground mishaps, use the terms listed in Table 4.5, Personnel Identification.
3.12.3. **Referring to Exhibits.** When a formal report includes supporting documents (records, photos, statements, technical reports, and the like), refer to the tabs and page numbers of the exhibits rather than repeating the supporting material.

3.13. Documenting the Investigation and Analysis. The investigation and analysis should be written in a manner where the reader clearly understands the relationship of how the findings and causes were determined. Additionally, some discussions concerning the logic in how the recommendations were chosen should be included in this section. Analyze data collected from witness statements, testimony, technical evaluations, and other information. Describe each area investigated and discuss its significance. Briefly discuss evidence with little or no significance. Extensively analyze areas important in explaining the mishap. Summarize conclusions at the end of this section before going on to the findings.
3.13.1. **Documenting Mishap Factors.** Mishap factors explain why causes, such as pilot error, supervision, or equipment failure, occurred. These factors are not mutually exclusive but are often interrelated and in some cases influence each other. Most mishaps involve multiple mishap factors. To ensure the investigation considers all important areas, use Air Force Pamphlet (AFPAM) 91-211, *Air Force Guide to Mishap Investigation* (formerly AFP 127-1, volumes 1 and 3). Omit factors not applicable and add others as necessary to analyze the mishap.
3.13.2. **Documenting Human Factors.** Consider human factors from both individual human performance and environmental, mission, and supervisory influence perspectives. While medical members are tasked with accomplishing the human performance narrative, they draw heavily on each SIB member's individual area of expertise to complete the report.
★3.13.3. **Documenting Risk Factors:** Identify pre-existing hazards and risks within the mishap sequence and determine whether these particular factors were directly addressed by individuals or management during preparation and execution of the mishap sequence.

3.14. Determining Findings. Findings are based on the weight of evidence, professional knowledge, and good judgment. They are arranged in chronological order. Each finding is an essential step in the mishap sequence, but each finding is not necessarily causal.
★3.14.1. Identify findings by starting with the last event resulting in the damage or injury. List the event, and determine why it occurred. Then, identify the event immediately preceding it and why it occurred. Continue this process until all events and conditions sustaining the mishap sequence are identified. Include in each finding only the things relating to the specific, brief event. The goal is to identify correctable events in the sequence in some cases the event sequence begins long before the actual mishap sequence with such things as design problems, improperly written directives, or an inadequate training program. Reverse the order of the findings to place in chronological order. Ensure the sequence continues to the point where all damage or injury has occurred and the initial rescue or recovery actions are completed. If the finding is not identifiable in the narrative, you have not described the narrative completely. Findings should not include or address new material not addressed in the narrative.
3.14.2. Include injuries occurring in the mishap at the appropriate chronological point in the event sequence. For example, insert ejection injury events occurring before the aircraft crashed as findings at the point they occurred chronologically.

Injuries or fatalities suffered by persons on the ground following the crash would be noted as the last finding of the main sequence, e.g., "the pilot ejected successfully; the aircraft crashed in a parking lot adjacent to the runway, fatally injuring two persons."

★3.14.3. Each finding is a single event or condition. Do not include any more information in each than is necessary to explain the event occurrence. Number the findings consecutively. Use the method of category-agent-reason as the format with which to write your findings. Precede each number with the word "finding" (Finding 1, Finding 2, etc.). Do not include people's names in the findings. Be specific, but do not include supporting evidence in the findings because the report narrative has already documented the evidence and the conclusions of the investigation. Each finding must have a logical connection to preceding findings. If no logical relationship exists, the sequence of the mishap has not been correctly described. Ensure critical events required to sustain the mishap sequence have not been omitted. Conversely, do not include events interesting to the reader, but not necessary to sustain the mishap sequence.

★3.14.4. When the investigator cannot pinpoint a correctable event in a sequence, list as much of the sequence as can be supported and insert a statement relating to the undetermined area. If there are supportable alternatives, identify them as such and list them. Show them as subordinate to the applicable finding by using a format such as "event XXX occurred due to one or more of the following reasons." If the finding in questions is CAUSAL, then for each alternative list the applicable category-agent-reason taxonomy. Do not list all of the possible alternatives that could have existed merely because they cannot be eliminated. Place this sort of conjecture in the analysis and narrative. The findings should contain a reasonable measure of probability based on evidence, professional knowledge, and good judgment.

★3.14.5. List "Other Findings of Significance" (OFS) uncovered during the investigation, but not central to the cause of the mishap in a subparagraph, immediately following the main sequence's findings in message reports and at the end of Tab T in formal reports. OFSs are often factors that the SIB has investigated that contributed but were not an actual part of the mishap sequence. The OFSs should also be fully supported in the TAB T analysis. Apply the same criteria for shortfalls discovered in the life sciences arena and provide applicable recommendations under this subcategory.

3.15. Determining Causes. Apply the reasonable person concept when determining a cause. If a person's performance or judgment was reasonable considering the mishap circumstances, do not assign cause. It is not appropriate to expect extraordinary or uniquely superior performance in such cases. Human limitations (physiological or psychological) may be causal even though they are reasonable. Environmental conditions may be causal if they were not reasonably avoidable. Findings that sustained the mishap sequence, but were normal to the situation as it developed, are not causal. These are often the unavoidable effects of a preceding cause.

3.15.1. A cause is a deficiency the correction, elimination, or avoidance of which would likely have prevented or mitigated the mishap damage or significant injury.

★3.15.2. After the findings have been listed, choose those findings that are causal. Identify each by adding the word "CAUSE" to the beginning of the finding statement. It is not necessary to list causes under a separate heading. Word a causal finding as a clear and simple statement of a single condition or event. In most instances a causal finding is correctable by commanders, supervisors, or individuals. Causal findings end with the category-agent-reason terms from table 3.1. Exercise caution when identifying individuals or equipment as CAUSAL. Single point failures are rare since most mishaps are the result of system or process failures. Individual actions/failures are often the *result*, not the *cause*, of these systemic failures. Proper identification of failed or inadequate processes often leads investigators to the real "root causes" therefore providing maximum mishap prevention potential.

3.15.3. Not every finding in a properly developed sequence is causal. Some are effects or the expected result of a previously identified cause even though their inclusion sustains the sequence leading to the mishap. Engine failure precipitated by a fuel boost pump failure is the expected result of the boost pump failure and is not causal. The boost pump failure may have been a result of an even earlier cause such as a bearing failure. Environmental conditions, such as a bird strike, lightning, high wind, or flood, may be causal if they are unavoidable even though they are not correctable. In rare instances the causal event may be unknown.

★3.15.4. Occasionally, an investigator may not be able to conclusively determine a specific cause event. In these special cases, the investigator may choose to list two or three most probable causes along with a CAR for each options.

3.15.5. Category-agent-reason (CAR) methodology provides investigators a tool for determining causal findings and writing clear and concise cause statements. Each causal finding will identify an accountable category, a responsible agent (along with a command level and a functional area) and a reason for the deficiency (table 3.1). Use this format for adding CAR selections after the finding: (accountable area, responsible agent (including command level/functional area), and reason). Attachment 2 defines each CAR term in table 3.1.

★3.16. Determining Recommendations. Recommendations are feasible solutions related to the causes of the damage, fatalities, or injuries in the mishap sequence of events. Although normally recommendations are made against causal

findings, they may also be included against normal findings. While recommendations are normally in response to causal findings, every cause need not have a recommendation.

3.16.1. Recommendations may vary in scope. Some actions can be taken at unit level. Other recommendations need actions by MAJCOMs or other agencies.

3.16.2. Assign action agencies for all recommendations. For actions regarding systems managed under the Integrated Weapons System Management (IWSM) concept, the system program office for the weapons system or commodity involved should be identified as OPR and the responsible MAJCOM as OCR. This will allow the SPD or IM to forward recommendations to the proper action agency (See Table 4.3). Do not list HQ AFSC as an action agency in place of appropriate organizations managing or controlling the resources involved.

- If the proposed action affects only organizations, resources, or people within the MAJCOM experiencing the mishap, confirm you have picked the right action offices with your MAJCOM safety office.
- If the proposed action requires action by an agency or organization outside the MAJCOM experiencing the mishap, coordinate the action with the proposed action office.
- If the proposed action requires Air Force-wide or interservice action, or action by another agency of the government, contact the appropriate HQ AFSC office (SEF, SEG, SEW) for guidance.

- Air Force-level actions will normally be accomplished by field operating agencies (FOA), not the Air Staff itself. For example, air traffic or airspace issues are managed by the Air Force Flight Standards Agency (AFFSA), not the Deputy Chief of Staff for Plans and Operations (HQ USAF/XO). Ensure proposed OPRs are assigned on this basis.

3.16.3. List the recommendations as a separate major topic immediately following the findings. Number recommendations consecutively. Include recommendations to prevent mishaps and injuries in one set of recommendations. Precede each number by the word "recommendation" (for example, Recommendation 1, Recommendation 2, etc.). Include only one recommendation in each statement. Use another number rather than a subgrouping (such as 1a, 1b, etc.).

3.16.4. In the mishap recommendations do not recommend briefing personnel on the mishap. Such a briefing is a basic command responsibility and a normal function of safety offices at all levels of command.

3.16.5. Do not recommend sweeping or general recommendations that cannot be closed by the action agency. Vague recommendations addressing the importance of simply doing one's job properly are also inappropriate. Allow for definitive closing action on recommendations. If the recommendation depends on tests or analyses incomplete when the report is sent in, explain this and give a reference to the test or analysis (such as DR, study, contract or MSTG number).

★3.16.6. The SIB may make "Other Recommendations of Significance" (ORS) related to other findings uncovered during their investigation they believe will prevent or mitigate future mishaps. Other recommendations of significance should be placed in a subparagraph immediately following the main sequence's recommendations in message reports and at the end of Tab T in formal reports. Place the OFSs and ORSs in the same section following the Primary Findings and Recommendations. Use a format of identifying the OFS followed by the appropriate ORS.

★3.16.7. SIBs and investigating officers make recommendations for changes to publications. Utilize local base support personnel as necessary to complete the applicable forms. OPRs identified as action agencies are responsible for submission, approval, and implementation of these changes. Follow the guidelines below when recommending changes to publications.

- To change technical orders, flight manuals, or checklists, the tasked MAJCOM (or in the case of multi-commands, lead MAJCOM) submits AFTO Form 22, *Technical Order System Publication Improvement Report and Reply*, according to TO 00-5-1, *Air Force Technical Order System*, or AF Form 847, *Recommendation for Change of Publication (Flight Publications),* according to AFI 11-215, *Flight Manual Procedures*, as applicable. If the proposed change is time sensitive, use the emergency critical safety hazard message format in AFI 11-215 (paragraph 4.5, this instruction). Make a statement in the recommendations stating "AFTO Form 22 or AF Form 847 submitted."
- In all cases, sanitize the "reason for recommended change" section of AFTO Form 22 or AF Form 847 according to paragraph 1.15.5. Do not place AFTO Forms 22 or AF Forms 847 in formal reports. Send copies of these documents to the MAJCOM safety staff and HQ AFSC through normal TO distribution procedures. Include the suspect pages of the checklist, flight manual, or technical order, current on the mishap date, with Tab T of the report (paragraph 5.5.2.1).

Figure 3.1. Technical or Engineering Evaluations of Materiel.

Mishap Aircraft: Type and serial number

Mishap Date:

ALC, PCTR, DoD Investigator:

I. INTRODUCTION: Intent of the report or analysis; purpose.

II. BACKGROUND: Not always required. If used, a statement of the mishap scenario, limited to facts (such as mishap date, aircraft type and serial number, type mission).

III. EVALUATION: Investigator analysis.

IV. DETERMINATION: Investigator opinions and conclusions about the analysis performed. Do not include opinion whether or not a particular failure contributed to or caused the mishap. Occasionally, there is an additional need to provide a technical analysis bearing on the cause of a mishap or an elaboration as to what is strong or weak in the analysis. Do not include this information in the formal technical or engineering evaluations of materiel. Rather, draft it separately and give it to the SIB under separate cover. Do not keep a copy of this separate document.

★Figure 3.2. Letter for Contractor Representatives to Safety Investigations

MEMORANDUM FOR (Contractor technical expert's name and company)

FROM: (SIB President)

SUBJECT: Protection of USAF Privileged Safety Information

1. In response to my request for technical assistance, the Air Force and your employer has agreed that you will serve as a technical expert for the Safety Investigation Board (SIB) over which I preside. Unless you specifically identify information provided in your technical report as proprietary data or confidential analysis or opinion, it will be included in the releasable portion (Part I) of the SIB's final report as factual material. If you want us to treat any part of your report as privileged information so we can protect it from disclosure outside the Department of Defense, you must specifically request such protection. In such case it will be included in the privileged portion (Part II) of the formal safety report and will be used solely for mishap-prevention purposes.

2. The military safety privilege protects confidentially provided evidence and the deliberative process of the SIB. It has been claimed by the Secretary of the Air Force many times and upheld by the United States Supreme Court. It enhances the SIB's ability to quickly and accurately identify potential causes of mishaps so we can prevent their recurrence. This process must have the highest degree of reliability to maintain combat readiness, national security, and public safety.

3. In accepting your appointment to serve as technical expert, you must agree to safeguard our safety privilege. You must not disclose to anyone, including your employer, any privileged information derived from our investigation. You will prepare only one copy of your technical report for the SIB. You must destroy or surrender to me any notes, documents, computer files, or other materials, produced or obtained during this investigation if they contain privileged information. You must not make copies of any privileged documents (including analytical computer products, confidential tape recordings, and staged photographs) for use outside the proceedings of this board. You may not have a copy of Part II of the Board's final report or any part of draft thereof. You must report to me (Or, after the SIB deconvenes, to HQ AFSC) any attempt by anyone, other than a Board member or other duly authorized person, to obtain any confidential or deliberative information from you about this investigation.

4. Before beginning your service to this Board, please sign and date the indorsement below. I will give you a copy of this memorandum.

(Board President's signature block)

1st Indorsement

To: (SIB President)

I acknowledge understanding of the contents of this letter and receipt of a copy thereof, and I agree to comply with the duties and responsibilities stated therein.

(Technical expert's signature block)

Table 3.1. Cause Analysis.

ACCOUNTABLE AREA (WHAT)		
OPERATIONS MAINTENANCE LOGISTICS MEDICAL SUPPORT NAT PHENOMENA PMV OPERATIONS RECREATION HOME/DOMESTIC MISCELLANEOUS UNKNOWN		
RESPONSIBLE AGENT (WHO)		
AGENT	**COMMAND LEVEL**	**FUNCTIONAL AREA**
PERSON SUPERVISOR MANAGEMENT COMMANDER CONTRACTOR NON-AF PERSON OR PROPERTY MATERIEL/EQUIPT DIRECTIVES ENV CONDITION OTHER UNKNOWN	OL DET FLT SQDN GRP BASE WING NAF PCTR ALC TTC OC/LAB CMD DRU FOA USAF DOD AFL OTHER NA	CC IM DE SV DP MW DO TNG LGW LGM LGS LGT LGK LGC SG AC SC SP AMM NOAF PRN NA

Table 3.1. Continued.

REASON (WHY)			
FAMILY			
PEOPLE	**PARTS**	**PAPER**	**OTHER**
ACCEPTED RISK	ACQUISITION	PUBLICATIONS	ANIMAL
ANTHROPOMETRY	ATTRITION	TRAINING	MANNING
BACKGROUND	FAULTY PART	INADEQUATE-RISK ASSESSMENT	WEATHER
COMPLACENCY	MODIFICATION		OTHER
DISCIPLINE	UNAUTH MOD		UNKNOWN
DRUGS-MEDICINE	DESIGN		
JUDGMENT	OTHER		
PATHOLOGICAL			
PERCEPTIONS			
PHYSIOLOGICAL			
PREPARATION			
PROFICIENCY			
PSYCHOLOGICAL			

Chapter 4

SAFETY MESSAGE REPORTS, LOGS, AND SUMMARIES

4.1. General Information. Safety reporting includes message reports, formal reports, and occupational injuries and illness forms and logs summarizing occupational mishap experience. Paragraphs 4.3 through 4.10 discuss message reports. Paragraphs 4.11 through 4.13 cover the AF Form 739 and the format for posting required OSHA occupational injury and illness summaries. Prepare mishap reports required by this instruction with the Aerospace Safety Automation Program (ASAP).

4.2. OPREP-3 Reports. Except for certain nuclear and radiological safety reports from tables 12.1 and 12.4, this instruction does not require OPREP-3 reports; they are prescribed by AFMAN 10-206 for command post network notification of certain events. These include some events defined as mishaps in this instruction. On request, safety staffs may assist command posts in assembling the required information for OPREP-3 reports on nonnuclear mishaps. However, these OPREP-3 reports will not contain privileged information.

4.3. Types of Reports. To ensure rapid and accurate dissemination of mishap information, send the following reports:

4.3.1. **Message Reports.** These reports are licensed as a part of the "Mishap Message Reports" group (RCS: HAF-SE(AR)9402). (For MINIMIZE instructions, see paragraph 4.6.) Report mishap message reports according to table 4.1 during declared or war emergency conditions (emergency status code C-2). The following explanations and instructions apply when nonnuclear message reports are required.

4.3.1.1. Preliminary Report. The first electronically transmitted message advising of a nonnuclear mishap. For Class A and B on-duty mishaps, send a fully releasable preliminary message report within 8 hours as follows:

- Include purely factual information only. Ensure no privileged information is included (nothing based on testimony, witness statements, etc.).
- Send it by military circuits. When military communications are not available, use commercial facilities to send basic mishap data and follow up with a copy by first class mail.
- Tables 4.1, 4.2, and 4.3 contain reporting schedules and addressees for nonnuclear safety messages.
- Include a narrative description of what happened, stating the best and most complete information available in simple and direct terms. Do not delay the report for lack of information: If complete data is not available, provide it in a status report.

4.3.1.2. Status Reports:

- A status report *must* be sent within 72 hours for all nonnuclear Class A and B on-duty mishaps (and other classes of mishaps deemed appropriate by the investigator) to relay new information discovered since the preliminary report and to identify SIB primary members or the investigating officer (by name, grade, organization, and SIB position).
- A status report *must* be sent at the 15 day point of the investigation for all nonnuclear Class A and B on-duty mishaps (and other classes of mishaps deemed appropriate by the investigator) to relay new status of the mishap investigation and any new information discovered since the 72-hour status report. See Figure 4.3 for the proper format for status messages.
- Status reports may be sent at any time to update information prior to final reports when awaiting results from DRs, TOX tests, etc. Findings, causes, and recommendations may be made in a status report if a delay is anticipated in receiving DR or TOX test results, but the investigator believes enough information is available to reach a conclusion. In this case, issue a status report no later than 30 days after the mishap with as much information as is known. Publish a final report when the DR closes or TOX test results are known and revise the status report's findings, causes, and recommendations, if required.
- Status reports may be sent to update or make significant changes to final reports if new information is found, such as results from TOX tests or DRs.

★4.3.1.3. Final Report. This report provides a narrative of the mishap sequence of events, states the mishap's causes, tells what corrective actions have been taken, and recommends additional preventive actions.

- Use the consolidated mishap report (CMR) format in figure 4.3 for all nonnuclear Class A, B, and C mishaps and HAP events, except as noted above.
- Complete the investigation and prepare the final message within the time limits of table 4.1. Do not delay release of the final message for internal command staffing. Such action delays review and timely initiation of corrective actions by other MAJCOMs and offices of primary or collateral responsibility. Internal command staffing and initiation of investigating MAJCOM corrective actions are a function of the formal review process described in chapter 6.
- For certain ground Class C mishap, use the abbreviated CMR format identified in Chapter 11.

★4.3.2. **Summary Report.** This report is submitted periodically, through MAJCOMs, to HQ AFSC. They contain a summary of certain kinds of mishaps occurring in the reporting organization during the reporting period. An example is the AF Form 739, Occupational Injuries and Illness Log for Civilian Personnel (RCS: HAF-SE(A)9403), which summarizes occupational injuries and illness reported through Air Force personnel and medical channels. Base ground safety and military public health (MPH) personnel prepare this log. A computer-generated tracking log is authorized. Figure 4.4 explains how to fill out the AF Form 739 and the data elements required to be reported higher headquarters. Continue logging data during declared or emergency wartime conditions, but do not include combat-related injuries (paragraph 2.1.4). ASAP will produce a log with the 12 data elements required for DoD and OSHA. A separate log will be maintained for military personnel. Within six working days after receiving information of an occupational injury or illness, appropriate information concerning such injury or illness shall be entered on the log.

4.3.3. **High Accident Potential (HAP) Reports.** HAP reports are a part of the "Mishap Message Reports" group (RCS: HAF-SE(AR)9402). Send message reports of HAP events to the addressees specified in tables 4.2, and 4.3 as soon as possible. If a HAP event involves materiel failure, malfunction, or design deficiency, the SPD or IM forwards corrective action taken or contemplated to HQ AFSC/SEC, HQ AFMC/SE, and the investigating MAJCOM by message within 60 days following the date of the associated DR or combined mishap DR. Replies to DRs by the agency with engineering responsibility suffice for the ALC or PCTR action message if the HAP's mishap event number is included. Mail one copy of all substantiating documents, such as metallurgical analyses, photographs, test reports, or contractor evaluations, to HQ AFSC/JA for TDRs prepared as the result of HAP events.

4.4. Reporting Mishaps Involving More Than One Mishap Category. Declare only one mishap, report it as a single event, and combine the safety reports into one message. Nuclear reporting (any class) takes precedence over any category of nonnuclear mishap (any class). Include both mishap types in the subject lines of messages. Submit a nuclear report, if applicable, using the nuclear reporting schedule, addressees, and format. Add the addressees and information for the other involved mishap category and release as a single message.

4.5. Acting on Critical Safety Information:

4.5.1. If investigators discover information which seriously impacts the operation of a weapon system or the continuation of an exercise, immediately notify the convening authority by telephone and follow up with a confirming message, regardless of whether or not such information is associated with the mishap under investigation. The convening authority notifies other action agencies, the appropriate SPD or IM, and HQ AFSC. Action agencies determine the proper response depending on the nature and seriousness of the information.

4.5.2. Originating units send emergency critical safety hazard messages according to AFI 11-215 and AFTO Form 22 to the appropriate agencies, if applicable.
4.5.3. Critical information related to military variants of civil aircraft, including commercial-off-the-shelf (COTS) aircraft, must be forwarded by the convening authority to HQ USAF/SE as quickly as practical. The Chief of Safety ensures all such information contributing to the promotion of aviation safety is forwarded to the Administrator, Federal Aviation Administration and/or Chairperson, National Transportation Safety Board for appropriate action.

4.6. Controlling Message Reports During MINIMIZE:

4.6.1. During emergency conditions MINIMIZE, send only the following reports by electronic transmission:

- Preliminary and status reports on nuclear accidents and incidents, and nuclear safety deficiencies resulting in a significant degradation of nuclear surety or having a serious operational impact (such as a possible code compromise).
- Preliminary and status reports on nonnuclear Class A and B on-duty mishaps.

4.6.2. Send all other reports by first-class mail within 7 working days until MINIMIZE is canceled. MAJCOMs may consolidate reports from their units and subsequently mail them to addressees outside their command within 15 working days.

4.7. Preparing Message Reports for Nuclear Weapon, Nuclear Reactor, or Radiological Mishaps. See chapter 12.

4.8. Preparing Message Reports for Aircraft, Missile, Ground, Space, and Explosives Mishaps. Prepare these nonnuclear message reports in the formats shown in figures 4.2, 4.3, or 11.1. Submit them according to the time requirements of table 4.1 and provide to appropriate addressees in tables 4.2, and 4.3. The following instructions also apply to these messages:
4.8.1. **Addressees.** Table 4.2 shows who receives the reports based on the need to know and to prevent inadvertent release of privileged information outside the Air Force. Table 4.3 shows the aircraft, engines, ALC/SPD, and common service applicability for all USAF aircraft. Send the final ASAP mishap report (see AFMAN 171-214, volumes I/II, *Aerospace Safety Automation Program (ASAP): R020/GT End Users Manual*) to MAJCOM/SE.
4.8.1.1. Commands may supplement this instruction to include internal organizations as addressees if they have a need to know.
4.8.1.2. Explosives and ground safety message reports are non-privileged, but are FOUO. Use the same need-to-know concept in selecting additional internal addressees as for aircraft and missile safety messages.
4.8.1.3. Use address indicating groups (AIGs) to include addressees within the command as recipients of selected safety messages. List the addressees in tables 4.2 and 4.3, followed by the appropriate weapon system AIG, when used. If base message center is not listed on the AIG, contact investigating MAJCOM to ensure they retransmit the message under the appropriate AIG. Do not place addressees outside the command on command AIG listings without HQ AFSC/JA approval.
4.8.1.3.1. Use AIGs for safety reports with information of critical and immediate importance to other users of the equipment. Only send those reports conveying significant safety information peculiar to the weapon system or its mission by worldwide AIG. Do not use these AIGs for other information. When using the worldwide AIG for other than flight safety reports, list all MAJCOMs as addressees, including ANG and AFRES that possess similar equipment. Do not use an AIG for reports that contain little or no information of worldwide mishap prevention potential. Use routine handling procedures for AIG addressees.
4.8.1.3.2. For nonnuclear air launched missiles, missile systems, explosives and weapons system mishaps or safety-related information, use AIG 9404//SE/SEW//. This AIG may also be used for all reports under this instruction involving flight and ground mishaps if missiles, missile systems, explosives or weapons systems are involved. The highest classification of information that may be transmitted using this AIG is "Unclassified" (UNCLAS).
4.8.1.3.3. For final message transmission of nonnuclear flight mishaps or safety-related information, use AIG 9396//SE/SEF//. This AIG may also be used for all final message reports under this instruction involving any aircraft involved mishaps. The highest classification of information that may be transmitted using this AIG is "Unclassified EFTO" (UNCLAS EFTO).
4.8.1.4. Ensure all agencies identified as OPRs for mishap recommendations are included in the addressee list, unless such agencies are outside the Department of the Air Force. For OPRs outside the Air Force, MAJCOM safety offices consult with HQ AFSC/JA on the appropriate means of conveying the tasking.
4.8.2. **Determining Mishap Event Number.** Because it is the single common worldwide identifier of a mishap, include the mishap event number in the subject lines of all nonnuclear message reports. Refer to the mishap event number in all related correspondence, DRs, TDRs, and indorsements. For all nonnuclear mishaps, the mishap event number consists of sixteen characters, such as "96/03/21, ZQKL, 005A," assembled as follows:
4.8.2.1. Date of Mishap. This is the local date, not the Zulu or Coordinated Universal Time (CUT) day. Use eight digits (YYYYMMDD).

4.8.2.2. Installation Code. Use four letters (reference table ADE GE-611, AFPAM 10-203, *SORTS Data Element Dictionary and Format*). GSUs for ARC forces need to use local base code. Note: GSU and tenant units may not have the same codes as the reporting unit.
4.8.2.3. Unit Control Number. Use separate sets of four-character combinations (three digits and one letter) for unit control numbers. ("Unit" means group equivalent or higher.) Assign the digits in order for each nonnuclear mishap. Host base safety staffs should assign blocks of numbers to their tenants. The last space designates the mishap class (A, B, or C). HAP events have no reportable costs and are designated by the letter "H," e.g., "ABCD, 406H."
4.8.3. **Review of Final Report.** Include the investigators' conclusions as findings, causes in CAR format (paragraph 3.15), and recommendations in the final report. Many addressees do not receive the formal reports, so include enough information in the final report to reasonably lead to the conclusions. The following standards apply to all final reports; however, references to formal reports and command endorsements apply primarily to final reports of Class A and B mishaps:
4.8.3.1. Before the SIB or investigating officer sends the final report, the convening authority's safety staff ensures:

- The report includes significant points of the investigation and analysis.
- The SIB's or investigating officer's findings and causes meet the CAR format.
- The report shows the correct action agencies.

4.8.3.2. The convening authority determines whether the final report fulfills the purposes, intent, and requirements of the mishap prevention program. If it does not, the convening authority will attach written comments to the final report as an addendum or direct an additional investigation. At this stage of the investigation and reporting process, the intent is to ensure each report is technically correct according to paragraph 4.8.3.1.
4.8.3.3. Only the primary members of the safety board can make changes to the final report. Comments raised by the convening authority addendum will be worked during the Memorandum of Final Evaluation process. If the final SIB message needs to be changed after it is completed and signed by the board, the primary members of the SIB shall be physically reconvened.

4.9. Writing the Narrative Report. The principles for writing the narrative portion of the final message report are the same as for the formal report. See chapters 3 and 5 for guidance.

4.10. Marking Messages, Reports, Documents, and Other Safety Materials. Air Force mishap messages are subject to limited distribution. Moreover, aircraft, missile, space, nuclear, and certain ground and explosives safety reports contain privileged information. Use the following special markings on safety materials to ensure the required special handling:
★4.10.1. **Marking Privileged Messages:** Place the following warning immediately before the subject line of all privileged messages. ***EXCEPTION:*** Preliminary Class A and B aircraft, missile, and space messages ("8-hour" reports) are factual only and fully releasable unless controlled for other reasons, such as information security.

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DESTROY IN ACCORDANCE WITH AFMAN 37-139 WHEN NO LONGER NEEDED FOR MISHAP PREVENTION PURPOSES.

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NOTE: For classified messages add the proper security classification marking from AFI 31-401, *Information Security Program Management*, and omit the notation "FOR OFFICIAL USE ONLY."

4.10.2. **Marking Privileged Reports.** Place figure 4.1 at the foot of each page.
4.10.3. **Marking Non-Privileged Reports.** Do not place markings on unclassified pages of non-privileged reports that indicate special handling requirements except "FOR OFFICIAL USE ONLY." For classified pages, add the proper security clearance marking from AFI 31-401 and omit the notation "FOR OFFICIAL USE ONLY."
4.10.4. **Marking Reports Submitted on AF Form 739.** Do not mark this report or log for limited distribution.
4.10.5. **Marking Other Safety Documents Containing Privileged Information.** Each page of other safety documents containing privileged information must be marked with figure 4.1. Examples are MAJCOM endorsements of mishaps and

semiannual updates of open recommendations. For classified documents, add the proper security classification marking from AFI 31-401 and omit the notation "FOR OFFICIAL USE ONLY."

4.10.6. **Marking Audio and Video Tapes and Other Electronic Media Containing Privileged Material.** Material derived from SIB analysis, witness testimony, simulator reenactments, computer generated flight profiles, and similar sources is used for mishap prevention in safety briefings and training. Privileged tapes and products will contain figure 4.1 at the beginning and the end of the tape, program, or recording.

4.11. Reporting Occupational Mishaps. Executive Order 12196 requires federal agencies report occupational mishaps to the Secretary of Labor. Federal regulation 29 CF 1960, Safety and Health Provisions for Federal Employees, sets requirements and provides standard forms for these records and reports.

4.12. Logging Occupational Illnesses and Injuries. Each Air Force base and geographically separated unit (GSU) keeps a daily record of on-duty civilian illness and injuries. In accordance with DoDI 6055.7, a log of military on-duty illness and injuries will also be maintained. These logs must be maintained by the safety office.

4.12.1. **Civilian Personnel Office.** Forward copies of CA-1s, **Federal Employee's Notice of Traumatic Injury and Claim for Continuation of Pay/Compensation**, and CA-6s, **Official Superior's Report of Employee's Death,** involving injuries and deaths to the base safety office and copies of CA-2s, **Notice Of Occupational Disease and Claim for Compensation,** and CA-6s involving illnesses and deaths to the base military public health (MPH) office to use in logging and investigating potential occupational injuries and illness. Forwards copies of CA-1s to the medical treatment facility for filing in the individual's medical record.

4.12.2. **Medical Service.** Develop and implement procedures to identify and report occupational injuries (military and civilian) to the base safety office.

4.12.2.1. AF Form 190, **Occupational Illness/Injury Report**. Report all suspected or confirmed occupational illness to MPH for initiation of an AF Form 190. Once an occupational illness is confirmed, the MPH office forwards the completed AF Form 190 to the healthcare provider for filing in the patient's medical records, sends a copy to the Occupational Illness and Data Registry (OIDR) at AL/OEMO, Brooks AFB TX 78235-5000, and enters the patient's name, SSAN, diagnosis, and the date into an occupational illness log maintained by MPH.

4.12.2.2. AF Form 739. See figure 4.4 to fill out this form. MPH will log CA-2 and CA-6, claims, and any confirmed occupational illness in civilian workers detected through their medical surveillance system, on AF Form 739 and forward a copy to the base safety office no later than the third working day of each month. The base safety office will post these AF Forms 739 with the injury logs to satisfy the OSHA requirement for a single-point access to injury or illness logs.

4.12.2.3. Armstrong Laboratory. This laboratory maintains the OIDR and is repository for AF Forms 190. It provides quarterly summary reports to MAJCOM MPH offices to provide feedback of AF Forms 190 submitted by the bases. It also prepares a consolidated report of occupational illness reported to the OIDR and submits it to HQ AFMOA/SGPA by 1 November for the previous fiscal year. This information will be included in the annual Air Force occupational safety and health report to the Secretary of Labor.

4.12.3. **Base Safety Office.** Use the information provided on the AF Form 739 to prepare the annual summary of occupational injuries. Forward a copy of the report as required by MAJCOM, DRU, or FOA directives, through command channels, to HQ AFSC/SEG not later than 15 November. Report the number of DAF, nonappropriated fund (NAF), and Air Force foreign nationals (AFFN) civilian medical treatment cases, transfers or terminations due to injury, and lost consciousness cases. Report each category (DAF, NAF, and AFFN) separately. In addition, include Youth Opportunity Program (YOP) injury cases in the DAF category.

4.13. Summary of Occupational Injuries, Illnesses, and Fatalities. The host ground safety office prepares an annual summary of occupational injuries, illness, and fatalities by fiscal year basis and posts it no later than 15 November for 30 consecutive days. The summary reflects data totals required by paragraph 4.12 for the host organization, parent command tenants, and other command tenants. The format for displaying this information is at the discretion of the host ground safety office. An acceptable format is in Appendix A of OSHA 2014, *Record Keeping and Reporting Guidelines for Federal Agencies*, 1986. The summary provides, at a minimum, the total fatal cases, total lost-time cases and total no-lost time cases for occupational injuries, and occupational illnesses and diseases.

★**Figure 4.1. Privileged Warning.**

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★**Figure 4.2. Format for Preliminary Class A, B, or C Nonnuclear Mishap or HAP Messages.**

Use this format for preliminary Class A and B nonnuclear mishap messages required by table 4.1. This format may also be used for preliminary Class C on-duty mishaps and HAPs when submission of a preliminary message for such events is deemed appropriate by the investigator. This format can be used for 72-hour status reports. Preliminary (8-hour) messages must not contain privileged information. If this format is used for a 72-hour status report, include the Privileged markings from figure 4.3.

FROM: (Originator)
TO: (see tables 4.2, and 4.3)
UNCLAS
SUBJECT: TYPE AIRCRAFT(if applicable), CLASS, CATEGORY, REPORT STATUS, AND MISHAP EVENT NUMBER (see paragraph 4.8.2, this instruction)

NOTE: For "*" entries, see table 4.5.

1. Date and time of mishap. Give date (YYYYMMDD), local time (24 hour clock), and whether (day or night).

2. Base submitting report (paragraph 4.8.2, this instruction). Was mishap on base? (Y or N).

NOTE: If base code is unknown, use clear text of base name.

3. Duty Status.

4. Name of nearest base to mishap.

5. Location of mishap. If on a military base, give specific location, e.g., departure end of runway 23, building 555, or munitions storage area. If mishap occurred off base, use street and highway references, as well as distance and direction from nearest military base. For aircraft and missiles impacting off base or off range, give location by magnetic direction and distance in nautical miles from nearest military base, e.g., 25 NM ESE of Nellis AFB NV. If an item is dropped from an aircraft and not recovered, list location as in flight with an approximation of location.

6. Give latitude and longitude of mishap in minutes and degrees to 2 decimal places. For bird strike reporting, include estimated latitude and longitude of bird strike.

7. Object information.
★7.1. *Nomenclature: Air Force equipment or facilities identification. For aircraft and missiles, include the mission-design-series (MDS) and weapon system serial number. For aircraft mishaps, include engine type. For air refueling mishaps, also include MDS and serial number of other aircraft. For vehicles and equipment, list nomenclature and serial numbers. For facilities, list building number and principal purpose. For explosives, give complete nomenclature of item, e.g., M8A1 parachute flare, MK4 Mod 3 impulse cartridge, or FMU 56/B fuse. For any mishap involving LANTIRN navigation and targeting pods or engines, include the type equipment and the serial number.
7.2. *Accountable MAJCOM and squadron of equipment or of personnel for ground injury mishaps. Normally, this entry shows chain of command for unit of possession or unit of assignment for ground personnel injury mishaps.
7.3. Was crash or mishap within 10 NM of base? (Y or N)
★7.4. Was object destroyed? (Y or N) (If No, summarize damage assessment)

Figure 4.2. Continued.

★8. Personnel Information. Include known information about personnel fatalities and injuries. Do not include names due to next of kin notification considerations. Do not include SSANs on preliminary messages. Include information on crewmembers, passengers, and bystanders.
8.1. *Grade: Age: AFSC:
8.2. *Injury Class and Type:
★8.3. Ejection attempted/successful. (If applicable)
★8.4. For crewmembers include qualifications, total flying time, time in mishap aircraft type, 30/60/90 times and sortie counts, and Air Force component (Active, ANG, or AFRES).

★9. Narrative of circumstances. Give brief description of mishap. Provide strictly abbreviated, factual information. Do not include information implying cause or containing material gained through testimony from crewmembers or other witnesses. Describe extent of damage, e.g., "Building destroyed by fire or explosion," "Aircraft destroyed," etc. Include mission information, including mission type, formation size and position, ordnance, and mishap weather.

★10. Initial estimates of collateral damage and injury costs. Give estimate of damage to non-Air Force property and non-Air Force injury costs if applicable. Include status of on-going rescue and recovery operations, hazard containment, and security. Provide information on the level of media interest.

★11. Interim Safety Investigation Board President and cognizant official and telephone number (DSN and commercial).

NOTE: For "*" entries, see table 4.5.

Figure 4.3. Format for Consolidated Mishap Report (CMR) Nonnuclear Mishaps.

TO: (SEE TABLES 4.2 and 4.3)
(Security Classification) FROM: (ORIGINATOR)

NOTE: For classified reports, see paragraph 4.10, this instruction.

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NOTE: The Privileged marking applies to aircraft, space, and missile mishaps. Reports of ground and explosives mishaps are non-privileged reports. Use the phrase "For Official Use Only" on non-privileged reports, but do not use the remainder of the Privileged advisory. If a security classification is used, "For Official Use Only" does not apply.

NOTE: For classified messages add the proper security classification marking from AFI 31-401 and omit the quotation "FOR OFFICIAL USE ONLY."

SUBJECT: TYPE AIRCRAFT (if applicable), CLASS, CATEGORY, CROSS CATEGORY INVOLVEMENT, SUBCATEGORY, REPORT STATUS, MISHAP EVENT NUMBER.

Example: F-16C, Class A, Flight Mishap, Missile Involvement, Air Launch, Final Report, 96/03/07, CPRL, 001A (paragraph 4.8.2, this instruction).

NOTE: For category, cross category involvement, and subcategory, see table 4.5. For mishap event number, see paragraph 4.8.2, this instruction.

Figure 4.3. Continued.

1. Location of mishap:
1.1. Name of base or military property (such as Utah Test and Training Range) on which mishap occurred. If mishap occurred off base, state "off military property." Courtesy reporting should be accomplished by the nearest Air Force installation.
1.2. Duty Status: on duty or off duty.
1.3. State and country of mishap.
1.4. Latitude and longitude (degrees and minutes to two decimal places), for aircraft, missile, and space mishaps and HAP events only. Radial and DME (CZI 252/27) are acceptable in a 72-hour status report when coordinates are not available. However, the final report must contain coordinates. For ground mishaps, use street and highway references as well as distance and direction from the nearest Air Force base.
1.5. Local Time.

2. Accountability:
2.1. MAJCOM.*
2.2 Numbered Air Force, ALC, PCTR.
2.3. Wing/Group.
2.4. Squadron/Unit.
2.5. Base code. (AFPAM 10-203, ADE GE-611)

3. Environmental factors:
3.1. Weather was a factor (Y or N).
3.2. Day or night.
3.3. Mishap did involve fire or explosion (Y or N).
3.4. Meteorological conditions (flight mishaps): VMC or IMC.

4. Damage and injury cost estimates:
4.1. Mishap cost NONAF: Estimate of damage to non-Air Force property, including other DoD and non-DoD property.
4.2. AF cost damage: Cost of damage to Air Force property, including labor and materiel.
4.3. Cost total injury: Cost of injuries to Air Force personnel, including military and civilian.
4.4. Total mishap cost (sum of costs in items 4.1 through 4.3).

5. Personnel involved: Give the following data on each person involved. If more than one person is involved, provide information in subparagraphs entitled "Person 1," "Person 2," etc. Repeat entry 5.1 through 5.1.28 for each person involved in the mishap. Number as 5.X through 5.X.28.
5.1. Last name, first name, MI of mishap individuals. (For ground and explosives mishaps only.; Do not include name for other categories of mishaps.)
5.1.1. SSAN. (Do not include SSAN for explosives reports. SSAN is mandatory for persons involved in flight and ground mishaps. Do not omit or substitute required information with “available upon request” or similar wording.)
5.1.2. Gender.
5.1.3. Age.
5.1.4. Grade.*
5.1.5. Duty AFSC or job series.
5.1.6. Time on duty prior to mishap. Give time to nearest 10th of the hour from the time the individual reported to work until he or she was involved in the mishap.
5.1.7. Activity at time of mishap.*
5.1.8. Role in event.*
5.1.9. Functional area.*
5.1.10. Organization assigned.
5.1.10.1. MAJCOM.*
5.1.10.2. Numbered Air Force, ALC, PCTR.
5.1.10.3. Wing/Group.
5.1.10.4. Squadron/Unit.

Figure 4.3. Continued.

5.1.10.5. Base.
5.1.11. Component.*
5.1.12. TOX testing (positive, negative, pending, or not accomplished). If positive or not accomplished, explain in narrative. TOX test information must be identified in all mishaps.
5.1.12.1. Substance type.*
5.1.12.2. Substance level.
5.1.13. Injury class.*
5.1.14. Part of body injured.*
5.1.15. Type injury.*
5.1.16. Was individual training a factor in the mishap (Y or N)? Types of training include traffic safety, job task, life support, etc. If training was factor, answer following six questions:
5.1.16.1. Was individual trained and, if required, certified to perform task (Y or N)?
5.1.16.2. Was training program, as designed, adequate to perform task (Y or N)?
5.1.16.3. Did training, as administered, comply with established training program (Y or N)?
5.1.16.4. Were written instructions available (checklist, TO, etc.) (Y or N)?
5.1.16.5. Were written instructions used (Y or N)?
5.1.16.6. Were written instructions satisfactory (Y or N)?
5.1.17. Safety equipment. Select available safety equipment (maximum of three) from table 4.5, and state if it was used (Y or N) and if it worked (Y or N). Use following format: seat belts/yes/yes; parachute/yes/no/; helmet/no/(blank).*

NOTE: Continue with next portion of item 5 only for flight, flight unmanned mishaps, or flight-related mishaps.

5.1.18. Crew position.*
5.1.19. RPI code.*
5.1.20. Specialized cockpit management training completed (Y or N).
5.1.21. Total flying time.
5.1.22. IP and FP time in this type aircraft.
5.1.23. IP and FP time in this type aircraft last 30/60/90 days.
5.1.24. Sorties in this type aircraft last 30/60/90 days.
5.1.25. Ejection or bailout attempt.*
5.1.26. Mishap cabin altitude and duration (physiological mishaps only).
5.1.27. Length of unconsciousness (physiological mishaps only).
5.1.28. Type night vision device used.*

6. Property data. Give following data on each piece of property involved. If more than one piece of property is involved, provide information in subparagraphs entitled "Object 1," "Object 2," etc.
6.1. Property identification.* Repeat all of entry 6.1 for each item if more than one of the same aircraft or property type is involved. Number as 6.X.1 through 6.X.17.
6.1.1. Organization assigned. If the organization is same as paragraph 2, state "same as paragraph 2."
6.1.1.1. MAJCOM.*
6.1.1.2. Numbered Air Force, ALC, PCTR.
6.1.1.3. Wing/Group.
6.1.2. Description (ground mishaps only).*
6.1.3. Vehicle or equipment serial number or aircraft tail number.
6.1.4. Object or vehicle activity at time of mishap.*
6.1.5. Was object destroyed (Y or N)?
6.1.6. Cost to repair or replace.
6.1.7. Persons involved with this object or property.
6.1.7.1. Person's last name. Repeat 6.1.7.1 as 6.1.7.X for each person involved with this object.
NOTE: Use next portion of item 6 only for mishaps involving aircraft, missiles, space, or explosives.
6.1.8. Mission-design-series (MDS).

Figure 4.3. Continued.

6.1.9. Crash within 10 miles of base? (Y or N)
6.1.10. Major system failing.*
6.1.11. Parts information. Repeat entries 6.1.11.1 through 6.1.11.1.6 as required for all failed parts. Number as 6.1.11.X through 6.1.11.X.6.
6.1.11.1. Failed part:
6.1.11.1.1. Failed part description.
6.1.11.1.2. Failed part number.
6.1.11.1.3. Failed part manufacturer.
6.1.11.1.4. How malfunction code (see Dash 6 TO).
6.1.11.1.5. Work unit code (see Dash 6 TO).
6.1.11.1.6. Report control number from DR report.
6.1.12. Mission symbol for mishaps involving aircraft or space.*
6.1.13. Duration of flight for mishaps involving aircraft or space (to nearest 10th of an hour).
6.1.14. Type of barrier or cable, if engaged, for mishaps involving aircraft.*
6.1.15. Runway condition reading (RCR).
6.1.16. Lot number of explosives items for mishaps involving missiles or explosives.
6.1.17. Engine information. Repeat entries 6.1.17.1 through 6.1.17.1.3 for each mishap engine. Number as 6.1.17.X through 6.1.17.X.3.
6.1.17.1. Mishap engine.
6.1.17.1.1. Engine installed position number.
6.1.17.1.2. MDS of engine.
6.1.17.1.3. Engine serial number.
6.1.18. Pod Information (LANTIRN, etc.). (Repeat for each mishap pod, i.e., 6.1.18.3 and 6.1.18.4 would report data for second pod, etc.)
6.1.18.1. Equipment designator of pod.
6.1.18.2. Serial Number of pod.

7. Narrative. Give a concise, chronological description of the facts and circumstances leading to the mishap. For areas not factors in the mishap, give details in narrative not included elsewhere in the report. Include enough information in final reports to show SIB or investigating officer reasoning in reaching findings and recommendations. If an aircraft mishap occurs during takeoff, landing, or final approach, give distance (in feet) long or short of the runway or helipad and the distance left or right of centerline. In all cases, continue the sequence through point of occurrence (or discovery) for all damage and injury or until the event ends; that is, aircraft lands or crashes. For aircraft, were crash-worthiness features a factor in mishap? If so, explain in narrative. Discuss crash-worthiness features affecting damage or injury. Include crash-worthiness features incorporated into the design that mitigated damage or injury, features that did not work as designed, and features not incorporated into the design but that might have mitigated damage or injury. For technical assistance on this item, contact HQ AFSC/SEF, DSN 246-1390, commercial (505) 846-1390. Specify in the narrative if an accident/collateral investigation was/was not convened (and is being conducted by (the specific JA Office conducting the accident/collateral investigation). If the mishap involves a bird strike resulting in reportable damage, include the data from paragraph 7.5.3, this instruction. For ground mishaps, list traffic safety courses by type and date of completion.

8. Findings and causes. If a crewmember suffered reportable injury during ejection or survival phase, include associated findings and causes as part of complete mishap sequence. Do not separate such events into separate egress or survival findings. Repeat entries 8.1 through 8.X for the required number of findings and causes. Use the CAR methodology from paragraph 3.15.4, this instruction. Findings must not address new information that was not been previously discussed in the narrative.

9. Preventive action recommended or taken. Repeat entries 9.1 through 9.X as necessary.

10. Cognizant official, unit, office symbol, and telephone number (DSN and commercial).

NOTE: The CMR format provides the user appropriate fields based on mishap class and category.

Use this format for HAP events and Classes A, B, and C nonnuclear status and final reports. ASAP will be used to generate this report.

Figure 4.4. How To Fill Out AF Form 739, Occupational Injuries and Illness Log for Civilian Personnel.

Make entry on the log for each on-duty occupational injury or illness to Air Force civilian personnel. Record CA Form 1, **Federal Employee's Notice of Traumatic Injury and Claim for Continuation of Pay/Compensation**; CA Form 2, **Notice of Occupational Disease and Claim for Compensation;** and CA Form 6, **Authorization for Examination and/or Treatment**; resulting from injuries and illness filed with Office of Workers' Compensation Programs (OWCP) on the AF Form 739. Enter data as specified by the following instructions.

Column A - Case Number. Start with number "1" for the first reported case of the fiscal year. Continue in numerical order regardless of the actual order of the mishap.

Column B - Date of the Injury/Illness. Month, day, and year.

Column C - NAME -- (Last, First, and Middle Initial) and component (DAF, NAF, YOP, AFFN).

Column D - Job Series. This is a 3- or 4- digit number. See AFPAM 36-503, *Civilian Travel and Transportation PCS*, for skills coding information.

Column E - Unit/Symbol. Use the standard organizational symbol to which the employee is assigned.

Column F - Class. Enter mishap class (paragraph 2.4, this instruction). Indicate "A" for Class A mishap, "B" for Class B mishap, etc. A list of the classes appears at the bottom of the log.

Column G - Injury/Illness Type. (FT, PT, or PP). FT--fatal injury; PT--permanent total;. PP--permanent partial.

Column H - Illness Code. Enter the code that most accurately describes the illness. A list of the codes appears at the bottom of the log.

Column I - No Lost Time.

Column I(1) - Lost Consciousness. Enter a check in I(1) for lost consciousness cases not involving fatalities or lost workdays.

Column I(2) - Transferred. Transferred to another job. Enter a check in the I(2) for cases of occupational injury or illness not involving fatalities or lost workdays but resulting in job transfer.

Column I(3) - Medical Treatment Greater Than First Aid. Enter a check for all cases of occupational injury or illness not involving fatalities or lost workdays but resulting in treatment greater than first aid. See OMB Bulletin 1220-0029, *Recordkeeping Guidelines for Occupational Injuries and Illness*.

Column J - Lost Time.

Column J(1) - Hours. Enter the lost-time hours (parts of workdays) for injury or illness (Class D), i.e., indicate number of hours (1 to 7) lost. Do not count the day of injury. Do not count time spent away from work to receive medical treatment or examination.

Column J(2) - Days. Enter full days lost (i.e., greater than 7 hours). If the actual number of days lost are not known, enter an estimate of workdays lost.

Column K - Description/Location of Injury and Activity At Time. Complete this column for all mishaps. Example: Laceration, right finger--cutting a piece of wood, Building 1505, CE.

Totals. Add total numbers or checks.

★Figure 4.5. Format for Preliminary/Final Class D Nonnuclear Explosive/Missile Mishap Event Message Report.

Use this format for preliminary and final message reports of Class D nonnuclear explosive/missile mishaps required by paragraphs 8.5.2.and 10.4.6. Use preliminary report to meet 10 duty day time requirement if all information is not available at that time. Final or status update report required in 30 days. Use limited-use warning (figure 4.1) for all missile reports or explosives reports with space, missile or flight involvement. Explosives reports require general use " For Official Use Only" markings.

FROM: (Originator)
TO: (see tables 4.2 and 4.3)
UNCLAS
SUBJECT: TYPE AIRCRAFT(if applicable), CLASS, CATEGORY, TYPE REPORT, AND MISHAP EVENT NUMBER (see paragraph 4.8.2, this instruction)

1. Date and time of mishap. Give date (YYYYMMDD), local time (24 hour clock), and whether (day or night).

2. Base submitting report (paragraph 4.8.2, this instruction).

NOTE: If base code is unknown, use clear text of base name.

3. Location of mishap. If on a military base, give specific location, e.g., departure end of runway 23, building 555, or munitions storage area. If mishap occurred off base, use street and highway references, as well as distance and direction from nearest military base. For missiles impacting off base or off range, give location by magnetic direction and distance in nautical miles from nearest military base, e.g., 25 NM ESE of Nellis AFB NV. If an item is dropped from an aircraft and not recovered, list location as in flight with an approximation of location.

4. Nomenclature: Air Force equipment or facilities identification. For aircraft and missiles, include the mission-design-series (MDS) and weapon system serial number. For vehicles and equipment, list nomenclature and serial numbers. For facilities, list building number and principal purpose. For explosives, give complete nomenclature of item, e.g., M8A1 parachute flare, MK4 Mod 3 impulse cartridge, or FMU 56/B fuse.
4.1. Accountable MAJCOM and squadron of equipment or of personnel for ground personnel injury mishaps. Normally, this entry shows chain of command for unit of possession or unit of assignment for ground personnel injury mishaps.
4.2. Was object destroyed? (Y or N)
4.3. Cost to repair or replace

5. Narrative of circumstances. Give a chronological description of the facts and circumstances leading to the mishap. Include enough information in the final report to support the findings, causes, and recommendations. Describe extent of damage, e.g., "Building destroyed by fire or explosion," etc.

6. Findings and causes. Provide a chronological list of key finding and identify the those findings that are causal in the mishap. Use the CAR methodology from paragraph 3.15.4, this instruction.

7. Preventive action recommended or taken. Give a clear concise description.

8. Cognizant official, unit, office symbol, and telephone number (DSN).

★Table 4.1. Reporting/Recording Schedule for Class A, B, C, D, and X Nonnuclear Mishaps and HAP/FOD Events.

Reports required by this table are in addition to OPREP-3 reports required by AFMAN 10-206 (see note 1).				
	A	**B**	**C**	**D**
	If the mishap is a	**then submit**	**not later than**	**by**
1	Class A or B on-duty mishap (see note 15)	Preliminary (see note 2)	within 8 hours	Priority message (see note 3)
2		Status report (see note 4)	Within 72 hours (for explosives mishaps, within 2 days IAW DOD STD 6055.9)	routine message
3		Status report (see note 5)	15 calendar days, then as required.	CMR format, Fig 4.3
4		Final report (see note 5)	within 30 calendar days	
5		Formal report (see note 7)	Within 30 calendar days (see note 9 and 10)	AF Form 711-series or CMR as specified by category
6	Class A or B off-duty ground mishap	Preliminary report (see note 2)	end of the second duty day after the mishap	routine message including courtesy reporting by the nearest AF installation
7		Status report (see note 6)	as required necessary	CMR format, Fig 4.3
8		Final report (see note 5)	within 30 calendar days (see note 9)	
9	Class C on-duty mishap	Preliminary report [optional]see note 14 and note 15	N/A see note 14 and note 15	routine message
10		status report (see note 6)	as required	
11		Final report (see note 5)	within 30 calendar days (see note 9)	CMR format, Fig 4.3
12		Formal report (when directed by MAJCOM)	within 30 calendar days (see note 9)	AF Form 711-series or CMR as specified by category
13	Class C selected on-duty and off-duty ground mishap (see note 13)	monthly upchanneled	Within 10 calendar days following the reporting month.	By abbreviated CMR (figure 11.1) through command channels (courtesy copy to host safety office) (see notes 8, 10, and 11)
14	FOD	Preliminary report (optional)	N/A	routine message
15		status report	as required	CMR format, Fig 4.3
16		final report	within 30 calendar days (see note 9)	
17	HAP event	Preliminary report (see note 2)	As soon as possible	routine message
18		Status report (see note 6)	as required	CMR format, Fig 4.3
19		Final report (see note 5)	within 30 calendar days (see note 9)	
20		Formal report (if required by MAJCOM or HQ USAF/SE)	within 30 calendar days (see note 9)	AF Form 711-series or CMR as specified by category
21	Aircraft physiological Class C mishap	Preliminary report (optional)	N/A	routine message
22		Status report (see note 6)	as required	CMR format, Fig 4.3

Table 4.1. Continued.

	A	B	C	D
	If the mishap is a	**then submit**	**not later than**	**by**
23		Final report (see note 5)	within 30 calendar days (see note 9)	
24		life sciences report	within 30 calendar days (see note 9)	AF Form 711GC (see notes 11 and 12)
25	Class D (Explosive and Missile)	Preliminary report	within 5 calendar days	routine
		Status report	as required	CMR Format, Figure 4.3
		Finale report	within 30 calendar days	CMR Format, Figure 4.3
26	Class D or X (Ground mishaps only)	log entries see note 16	15 November through MAJCOM channels to HQ USAF	log, message, or ASAP

NOTES:
1. See paragraph 4.6 for instructions on MINIMIZE.
2. Use nonprivileged, unclassified figure 4.2 format for preliminary report.
3. Overseas commands use IMMEDIATE precedence.
4. Use figure 4.3 format for 72-hour status reports. Include new information discovered since the preliminary report and identify SIB members. Remember to place the safety privilege statement at the beginning of the message for all aircraft, missile, or space mishaps. Some ground and explosives mishaps may also involve privilege (paragraph 1.7).
5. Do not delay final reports awaiting testing results. If the results from testing significantly change the outcome of final report, send a status report describing the changes.
6. Include information not previously reported in the 72-hour or preliminary report. It is not necessary to use the entire figure 4.3 format for subsequent status reports. Only add information not previously reported. Use the figure 4.3 format when modifying a previously transmitted CMR or final report. (paragraph 7.4.5)
7. Not required for a missile mishap during DT&E, IOT&E, or FOT&E when special conditions in paragraph 8.5.5 are met.
8. MAJCOMs receiving upchanneled files will forward consolidated event files by the 25th calendar day following the reporting month.
9. For extension of due date, send request to the investigating MAJCOM with information copy to HQ AFSC/SEF, SEG, or SEW.
10. Mishaps reported in Class C abbreviated CMR format that are later upgraded to Class A or B will require status reports using message format in figure 4.3.
11. Send copies to HQ AFSC/SEC and MAJCOM, and ANGRC/AFRES if applicable.
12. Do not send extra forms to HQ AFSC, MAJCOMs, ANGRC, or AFRES if they are mailed in formal reports.
13. See paragraph 11.4.1.4 and 11.4.3 for Class C selected on- and off-duty mishaps.
14. Required for explosive, missile, and space mishaps. Submit as soon as possible but no later than 5 work days after the mishap.
15. For Air Force or non-Air Force civilians, ensure OSHA is notified in accordance with paragraph 11.9.2.5.
16. For class D missile and explosives mishap requirements see appropriate chapter.

★Table 4.2. Addressees for Aircraft, Explosives, Ground, Missile, Space, HAP, FOD, and Misc Air Operations Message Reports (see note 9)

	A	B	C
	Organization (see notes 3 and 5)	**Office Symbol**	**For**
1	HQ USAF KIRTLAND AFB NM	SE	All mishaps except abbreviated CMR
2	HQ USAF WASHINGTON DC	SEI	Class A and B mishaps;
3	HQ AFSOC HURLBURT FLD FL	SE	Class A, B and C mishaps and events (see notes 1 and 7)
4	HQ AETC RANDOLPH AFB TX	SE	
5	HQ AMC SCOTT AFB IL	SE	
6	HQ PACAF HICKAM AFB HI	SE	
7	HQ AFMC WRIGHT PATTERSON AFB OH	SE	
8	HQ ACC LANGLEY AFB VA	SE	
9	HQ AFSPC PETERSON AFB CO	SE	
10	HQ USAFA USAF ACADEMY CO	SE	
11	HQ USAFE RAMSTEIN AB GE	SE	
12	ANGRC ANDREWS AFB MD	SE/XO	
13	HQ AFRES ROBINS AFB GA	SE	
14	MAJCOM concerned (gaining MAJCOM for ANG/AFRES) (see note 7)	as required	All mishaps
15	Intermediate commands		
16	Home base of operator or crew (if other than the organization submitting the report)		
17	Home base of aircraft or command assignment (if other than that of the operator or crew)		
18	Military base of departure		
19	344 TRS LACKLAND AFB TX	TTEB	
20	ANGRC ANDREWS AFB MD (see note 8)	SE/XO	ANG mishaps
21	HQ AFRES ROBINS AFB GA	SE	AFRES mishaps (See note 4)
22	HQ USAF WASHINGTON DC	RE/REO	
23	HQ AFMOA BOLLING AFB DC	SGPA	Class A aircraft and physiological mishaps
24	HQ AFMC WRIGHT-PATTERSON AFB OH	SE/DR	All mishaps involving material deficiencies, Tech Order changes, or AF Policy changes, except for off-duty ground mishaps.
25	HQ AFFSA ANDREWS AFB MD	XV	Mishaps involving air traffic control services
26	MAJCOM concerned	DOF	
27	Intermediate commands	DOF	
28	AWS SCOTT AFB IL	SE	Mishaps involving weather events or services
29	ASC WRIGHT-PATTERSON AFB OH	SE	Mishaps involving aircraft or nonballistic missiles
30	SMC LOS ANGELES AFB CA	AXZ	Mishaps involving space vehicles, boosters, systems and Support systems; ballistic missile systems and/or components
31	OO-ALC HILL AFB UT	LMES	
32	HQ AFSPC PETERSON AFB CO	SE	
33	OO-ALC HILL AFB UT	LIWS/SE (see note 1)	Mishaps involving explosives or egress (CAD/PAD) items required for an ejection

Table 4.2. Continued.

	A	B	C
	Organization (see notes 3 and 5)	**Office Symbol**	**For**
34	ALC Safety and Materiel Safety Offices: OO-ALC HILL AFB UT SA-ALC KELLY AFB TX SM-ALC MCCLELLAN AFB CA WR-ALC ROBINS AFB GA OC-ALC TINKER AFB OK	 SE/SES/LF-S SE/LFCS SE/LAFS SE/SEM SE/LARM	Aircraft, explosives, and missile mishaps, ground mishaps involving TO, materiel, vehicle, or equipment deficiency; and other mishaps involving deficiencies in these areas
35	Appropriate ALC engine manager (see note 6) OC-ALC TINKER AFB OK SA-ALC KELLY AFB TX 361 TRS SHEPPARD AFB TX	 LP/SE/LARM LP/SE LFCS TSRJ (Class A or B only)	Mishaps involving power plant and FOD mishaps
36	AFDTC EGLIN AFB FL	SES	Mishaps involving conventional air-launched missiles and explosives
37	HQ AFOTEC KIRTLAND AFB NM	SE	Class A aircraft, missile, and space mishaps and all OT&E mishaps
38	HSC BROOKS AFB TX SA-ALC KELLY AFB TX	YAD LFCS	Mishaps involving life support systems
39	COMNAVSAFECEN NORFOLK NAS VA		Mishaps involving US Navy personnel or facilities and mishaps involving aircraft or missiles common to USAF and USN (tables 4.3 and 4.4 and note 5)
40	COMNAVAIRSYSCOM WASHINGTON DC		Mishaps involving missiles common to USAF and USN (table 4.4)
41	CDRUSASC FT RUCKER AL	CSSC-SE	Mishaps involving US Army personnel or facilities and mishaps involving aircraft or missiles common to USAF and USA (tables 4.3 and 4.4)
42	COMDT COGARD WASHINGTON DC		Mishaps involving US Coast Guard personnel or facilities and mishaps involving aircraft common to USAF and USCG (table 4.4)
43	SECDEF WASHINGTON DC	USD (A&T) (ES) SH	Preliminary report for mishaps involving fatality, in-patient hospitalization of three or more persons, or property damage of $1,000,000 or more
44	SAF WASHINGTON DC	MIQ	Preliminary and final report for Class A and B mishaps
45	AFIP WASHINGTON DC	OAFME	Preliminary and final report for Class A and B mishaps involving injury or death.
46	HQ AFCESA TYNDALL AFB FL	CEXF	Preliminary and final report for mishaps involving fire suppression or crash and rescue operations
47	SA-ALC KELLY AFB TX	SF/LFCS	Mishaps involving fuels or related products
48	DET 63 ASC INDIAN HEAD MD	CC	Mishaps involving EOD operations or activities

Table 4.2. Continued.

	A	B	C
	Organization (see notes 3 and 5)	**Office Symbol**	**For**
49	AL WRIGHT-PATTERSON AFB OH. SA-ALC KELLY AFB TX	CFBE LFCS	Aircraft mishaps involving ejections, crew module separation, or life support issues/problems
50	AFFSA ANDREWS AFB MD	XO	Aircraft mishaps involving instrument procedures or systems or flight in actual or simulated IMC
51	HQ ACC LANGLEY AFB VA	SE	Aircraft mishaps involving boom air refueling
52	HQ AMC SCOTT AFB IL	SE	
53	HQ PACAF HICKAM AFB HI	SE	
54	HQ USAFE RAMSTEIN AB GE	SE	
55	ANGRC ANDREWS AFB MD	SE	
56	HQ AFRES ROBINS AFB GA	SE	
57	OC-ALC TINKER AFB OK	SE/LARM	Aircraft mishaps involving either boom or probe and drogue refueling
58	WR-ALC ROBINS AFB GA	SE	
59	HQ AFSOC HURLBURT FLD FL	SE	
60	AFFTC EDWARDS AFB CA	SE/TE	
61	ASC WRIGHT-PATTERSON AFB OH	EMSF	
62	COMNAVSAFECEN NORFOLK NAS VA		Aircraft mishaps involving only probe and drogue refueling
63	CSAF WASHINGTON DC	CC	Final report for Class A aircraft mishaps
64	HQ ACC LANGLEY AFB VA	SGM	Aircraft physiological mishaps and final report for Class A and B aircraft mishaps
65	DEPT OF DEFENSE EXPLOSIVES SAFETY BOARD ALEXANDRIA VA	KT	Class A, B and C Missile, Explosives, and Space launch vehicle mishaps
66	9TH CAPS BEALE AFB CA	CC	Explosives mishaps
67	COMNAVSEASYSCOM WASHINGTON DC	SEA-652	Mishaps involving R&D or manufacture of explosives or munitions
68	CDRAMCCOM ROCK ISLAND IL	AMSMC-SF	
69	DLA FORT BELVIOR VA	AQOI	Mishaps involving R&D or manufacture of explosives or munitions and aircraft mishaps involving USAF contractors under DLA contract management
70	OC-ALC TINKER AFB OK	SE	All Class A and B aircraft factors mishaps (whether or not materiel were involved) and all Class C and H mishaps that identify material deficiencies or recommend TO or AF acquisition or logistics policy changes.
71	OO-ALC HILL AFB UT	SE	
72	SA-ALC KELLY AFB TX	SE	
73	SM-ALC MCCLELLAN AFB CA	SE	
74	WR-ALC ROBINS AFB GA	SE	
75	HQ ACC LANGLEY AFB VA	SE	All RPV reports
76	325FW TYNDALL AFB FL	SE	
77	USAFAWC EGLIN AFB FL	SE	
78	475WEG EGLIN AFB FL	SE	
79	ASC EGLIN AFB FL	YOT	
80	HQ USAF WASHINGTON DC	LGMW	Class A and B explosives mishaps
81	HQ AETC RANDOLPH AFB TX	TTO	

82	MAJCOM (as appropriate)	SE	Upchannel Final Message Report

Table 4.2. Continued.

	A	B	C
	Organization (see notes 3 and 5)	**Office Symbol**	**For**
83	HQ AFMC WRIGHT PATTERSON AFB OH	SEG	All mishaps involving AFMC managed systems, vehicles, and equipment

NOTES:
1. Include the aircraft system program director (SPD) or equivalent as an addressee when explosives or missile mishaps involve aircraft armament systems.
2. Include the appropriate SPD and item manager (IM) as addressees when mishaps involve Air Force materiel deficiencies.
3. Include the appropriate addressees from this table and those required by TO 00-35D-54, *USAF Materiel Deficiency Reporting and Investigating System*, for combined mishap and product quality deficiency reports (DRs).
4. Include all mishaps involving aircraft assigned to associate reserve programs (C-5, C-141, KC-10, C-9).
5. Reference Air Force Directory (AFDIR) 33-131, *Message Address Directory* for current message addresses.
6. Send messages only to appropriate ALC SPDs or engine IMs specified in TO 00-25-115, *Logistics Maintenance Engineering Management Assignment*, not indiscriminately to all SPDs or IMs.
★7. Include MAJCOMs that are common users of the mishap materiel (aircraft, engines, equipment, weapons, munitions, ordnance devices, explosives, missiles, vehicles, etc.) as message addressees when exchange of information would enhance mishap prevention efforts. Also use the Address Indicator Group (AIG) for the weapon system if one exists. MAJCOMs may also add AIGs specific to their command.

AIG 9380	A-10
AIG 9381	C-17
AIG 9383	C-5
AIG 9384	F-111
AIG 9386	Helicopters
AIG 9387	C-130
AIG 9388	C-12
AIG 9389	F-4
AIG 9390	B-52
AIG 9392	KC-135
AIG 9394	T-1
AIG 9395	T-38/F-5
AIG 9396	World-wide Flight Final Message (SE/SEF)
AIG 9397	T-37
AIG 9398	C-141
AIG 9399	F-16
AIG 9401	C-21
AIG 9404	Worldwide SE/SEW
AIG 9405	Aero Clubs
AIG 9406	B-1
AIG 9407	F-15
AIG 9409	Safety Crosstell

** Note: If mishap base is not listed on the AIG, investigating MAJCOM will retransmit message under appropriate AIG(s).

8. ANG units will send copy of all messages to appropriate ANG State Headquarters and the Adjutant General (TAG).
9. Safety offices are responsible for revalidating addressee lists prior to each message transmission. Do not send Privileged messages to addressees at lines 43 at any time.

Table 4.3. Aircraft, Engines, ALC or PCTR, and Common Service (If Applicable).

	A	B	C
	AIRCRAFT & ENGINES	**ALC/SPD**	**COMMON TO**
1	A-7	SM-ALC/LAF	USN
2	A-10	SM-ALC/LAF	
3	B-1	ASC/YD and OC-ALC/LAB	
4	B-2	ASC/YS	
5	B-52	OC-ALC/LH	
6	C-5	SA-ALC/LA	
7	C-9	OC-ALC/LK	USN
8	C-12 (all)	OC-ALC/LK	USA, USN
9	C-17	ASC/YC	
10	C-18	OC-ALC/LK	
11	C-20	OC-ALC/LK	USA, USN
12	C-21	OC-ALC/LK	USA
13	C-22	OC-ALC/LK	
14	C-23	OC-ALC/LK	USA
15	C-25	OC-ALC/LK	
16	C-26	OC-ALC/LK	
17	C-27	OC-ALC/LK	
18	C-29	OC-ALC/LK	
19	C-130 (all)	WR-ALC/LB	USCG, USN
20	C-131	SA-ALC/LF	USCG
21	C-135 (all)	OC-ALC/LC	USN
22	C-141	WR-ALC/LJ	
23	E-3	ESC/AW	
24	E-4	OC-ALC/LK	
25	F-4 (all)	OO-ALC/LAC	USN
26	F-5	SA-ALC/LF	USN
27	F-15	WR-ALC/LF	
28	F-16	ASC/YP	USN
29	F-22	ASC/YF	
30	F110 (engine)	OC-ALC/LP	USN
31	F-111 (all)	SM-ALC/LAC	
32	F-117	SM-ALC/QL	
33	H-1	WR-ALC/LU	USA, USN
34	H-3	WR-ALC/LU	USA, USCG, USN
35	H-53	WR-ALC/LU	USN
36	H-60	WR-ALC/LU	USA, USCG, USN
37	KC-10	OC-ALC/LK	
38	OV-10	SA-ALC/LF	USN
39	T-1	OC-ALC/LK	
40	T-37	SA-ALC/LF	
41	T-38	SA-ALC/LF	USN
42	T-39	SM-ALC/LAF	USN
43	T-41	OC-ALC/LK	USN
44	T-43	OC-ALC/LK	
45	TF30 (engine)	OC-ALC/LP	USN
46	TF34 (engine)	SA-ALC/LP	USCG, USN
47	UV-18	OC-ALC/LK	
48	U-2	ASC/RA	
49	UAVs	ASC/RA	
50	Reconnaissance	ASC/RA	
51	JPATS/T-1	ASC/YT	
52	E-8 (J-STARS)	ESC/JS	

53	F404 (engine)	SM-ALC/QL	USN

★Table 4.4. Missiles and Spacecraft Common to Other Services.

	A	B	C
	MISSILES & SPACECRAFT	**ALC**	**COMMON TO**
1	AIM-7 (Sparrow)	WR-ALC	USN
2	AIM-9 (Sidewinder)	WR-ALC	USN
3	AGM-45 (Shrike)	WR-ALC	USN
4	AGM-78 (Standard ARM)	WR-ALC	USN
5	BQM-34 A/E/F	WR-ALC	USA, USN
6	FLEETSATCOM	SMC-AFSPC	USN
7	MQM-107 B/D/E	WR-ALC	USA
8	AIM-120 (AMRAAM)	WR-ALC	USN
9	AGM-88 (HARM)	WR-ALC	USN
10	DSCS	SMC	USN
11	GSP	SMC-AFSPC	USA, USN
12	DMSP	SMC-AFSPC	(all)

★**Table 4.5. CMR Look-Up Table.**

CATEGORY								
FLIGHT	**FLIGHT-RELATED**	**FLIGHT UNMANNED VEHICLE**	**GROUND**	**MISSILE**	**EXPLOSIVES**	**SPACE**	**FOD**	**MISC AIR OPS**
CROSS CATEGORY								
FLIGHT	**FLIGHT-RELATED**	**FLIGHT UNMANNED VEHICLE**	**GROUND**	**MISSILE**	**EXPLOSIVES**	**SPACE**	**FOD**	**MISC AIR OPS**
Explosive Ground Missile Space None	Explosive Ground Missile Space None	Explosive Ground Missile Space None	Explosive Flight Missile Space None	Explosive Flight Ground Space None	Ground Flight Missile Space None	Explosive Flight Missile Ground None		Foreign Aircraft Commercial Aircraft Aero Club Aircraft Non-AF Aircraft
SUBCATEGORY								
FLIGHT	**FLIGHT-RELATED**	**FLIGHT UNMANNED VEHICLE**	**GROUND**	**MISSILE**	**EXPLOSIVES**	**SPACE**	**FOD**	**MISC AIR OPS**
Aircraft Structural Failures (Excluding Landing Gear) Bird strikes Bleed Air Failures Cargo Drop Collision with the Ground (Range) Collision with the Ground (Non-Range)	Aircraft Structural Failures (Excluding Landing Gear) Bird strikes Bleed Air Failures Cargo Drop Collision with the Ground (Range) Collision with the Ground (Non-Range)	Aircraft Structural Failures (Excluding Landing Gear) Bird strikes Bleed Air Failures Cargo Drop Collision with the Ground (Range) Collision with the Ground (Non-Range)	Commercial Carrier Combat Training Contractor GMV Industrial Marine Miscellaneous Natural Phenomena PMV Research & Development Spts and Rec SPV	Air Launch Gnd Launch Other RPV Silo Launch	Air Demolition Ground Other Pers Error	Booster Del Vehicle Other Payload		Aircraft Structural Failures (Excluding Landing Gear) Bird strikes Bleed Air Failures Cargo Drop Collision with the Ground (Range) Collision with the Ground (Non-Range)

Communication /Navigation Electrical Failures Engine Failures Facilities Flight Controls Flight Instrument Failures Fuel System Failures Hydraulic or Pneumatic Failures Landing Gear Failures Midair Collisions Miscellaneous Other Pilot Induced Control Loss Pilot Induced Flameouts Pilot Induced Landing Mishaps Pilot Induced Takeoff Mishaps Propeller Failures Tests Undetermined Weather	Communicatio n/Navigation Electrical Failures Engine Failures Facilities Flight Controls Flight Instrument Failures Fuel System Failures Hydraulic or Pneumatic Failures Landing Gear Failures Midair Collisions Miscellaneous Other Pilot Induced Control Loss Pilot Induced Flameouts Pilot Induced Landing Mishaps Pilot Induced Takeoff Mishaps Propeller Failures Tests Undetermined Weather	Communication /Navigation Electrical Failures Engine Failures Facilities Flight Controls Flight Instrument Failures Fuel System Failures Hydraulic or Pneumatic Failures Landing Gear Failures Midair Collisions Miscellaneous Other Pilot Induced Control Loss Pilot Induced Flameouts Pilot Induced Landing Mishaps Pilot Induced Takeoff Mishaps Propeller Failures Tests Undetermined Weather						Communication /Navigation Electrical Failures Engine Failures Facilities Flight Controls Flight Instrument Failures Fuel System Failures Hydraulic or Pneumatic Failures Landing Gear Failures Midair Collisions Miscellaneous Other Pilot Induced Control Loss Pilot Induced Flameouts Pilot Induced Landing Mishaps Pilot Induced Takeoff Mishaps Propeller Failures Tests Undetermined Weather
PERSONNEL IDENTIFICATION								
FLIGHT	**FLIGHT-**	**FLIGHT**	**GROUND**	**MISSILE**	**EXPLOSIVES**	**SPACE**	**FOD**	**MISC AIR**

	RELATED	**UNMANNED VEHICLE**						**OPS**
(See Note 1)	(See Note 1)	(See Note 1)	Bystand/Spect Operator Participant Passenger Pedestrian Spotter Supervisor Worker/Obs	Cmdr Co-driver Deputy Driver Escort Operator Other Range Officer Safety Repr Spectator Spotter Supervisor Team Chief Team Member	Bystander Driver EOD Operator Other Supervisor Worker	Operator Other Range Off Spectator Team Chief Team Member	(See Note 1)	(See Note 1)
PERSONNEL ACVTIVITY AT TIME OF MISHAP								
FLIGHT	**FLIGHT-RELATED**	**FLIGHT UNMANNED VEHICLE**	**GROUND**	**MISSILE**	**EXPLOSIVES**	**SPACE**	**FOD**	**MISC AIR OPS**
(See Note 1)	(See Note 1)	(See Note 1)	Assembling Backing Carrying Climbing Closing Crawling Cutting Disassembling Horseplaying Jumping Lifting Loading/ Unloading Observing Opening Operating Other Packing Pushing Reaching	Arming Assembling Con/Discon Dearming Disassembling Disposal Elect Check Emer Response Inst/Checkout Inst/Remov Loading Lowering Maintenance Monitor/Obser Operating Other Parachute Parking Raising Servicing	Arming Assembling Dearming Disassembling Disposing Exploding Loading Maintaining Mfg Operating Other Storing Testing Training Transporting Unloading	Assembling De-orbiting Launch Orbiting Other Storing Testing Transporting	(See Note 1)	(See Note 1)

			Riding In/On Running Sports Standing Testing Walking	Storing Testing Transporting Unloading Welding				
FUNCTIONAL AREA								
FLIGHT	**FLIGHT-RELATED**	**FLIGHT UNMANNED VEHICLE**	**GROUND**	**MISSILE**	**EXPLOSIVES**	**SPACE**	**FOD**	**MISC AIR OPS**
(See Note 1)	(See Note 1)	(See Note 1)	Acft Maint Aerial Port Basic Tng CE CE Hvy Rpair Combat Trng Communication Exp Ord Disp Finance HQ and Staff Medical Serv Missile Maint Operations OSI Other Personnel Photo Lab PME Lab Recruit Serv Research & Dev Safety Security Police Services Supply Tech Trng Cntr Transportation Weather	Cont/RDR Contractor Convoy Ops Elect Lab Field Maint Insp/QA Msl Recov Ops Org Maint Pneu Other Overhaul/ Depot Propellant Rng Safety RPV Cont Support Training Veh Req Branch	EOD Loading Maint/Insp Manufacturing Other Security Storage Test R & D	Assmbly/Checkout Factory Launch Site Other Range Impact Recovery Site Storage	(See Note 1)	(See Note 1)
COMPONENT								
ALL CATEGORIES								

AFFN (foreign civilian employee)	CIV (non-Air Force civilian)
DAFC (DAF civilian employee)	DoD (non-Air Force military)
FMIL (foreign military assigned to Air Force)	NAF (nonappropriated fund civilian)
OTHER	USAF (military)
YOP (youth opportunity program & student assistance program employees)	
SUSBASTANCE TYPE	
ALL CATEGORIES	
Alcohol	Drugs, OTC (over-the-counter)
Drugs, Other	Drugs, Rx (prescription)
None	Other
Unknown	
INJURY CLASS	
ALL CATEGORIES	
FT (Fatal)	LT (Lost Time)
LW (Lost Workday(s))	NL (No Lost Time)
NO (None)	OT (Other)
PP (Perm partial)	PT (Perm total)
TR (Treated and Released)	
BODY PARTS INJURED	
ALL CATEGORIES	
Abdomen	Ankle
Arm, lower	Arm, upper
Back	Body, all
Chest	Elbow
Eye	Face
Finger	Foot
Hand	Head
Hip	Knee
Leg, lower	Leg, upper
Mouth/Teeth	Neck
Other	Ribs
Shoulder	Thumb
Toe	Wrist
TYPE INJURY	
ALL CATEGORIES	
Abrasion	Amputation
Bruise	Burn
Collapsed Lung	Concussion
Contusion	Crush
Dislocation	Drown/Suffocate

Electric Shock	Electrocution
Fracture	Gunshot
Internal Inj	Laceration
Other	Puncture
Rupture	Sprain
Strain	Unknown

SAFETY EQUIPMENT TYPE								
FLIGHT	**FLIGHT-RELATED**	**FLIGHT UNMANNED VEHICLE**	**GROUND**	**MISSILE**	**EXPLOSIVES**	**SPACE**	**FOD**	**MISC AIR OPS**
Engine fire supp Fire extinguisher Life preserver Life raft O^2 mask O^2 system (aircraft) O^2 system (portable) Other Safety strap Seat restraint Smoke masks	Engine fire supp Fire extinguisher Life preserver Life raft O^2 mask O^2 system (aircraft) O^2 system (portable) Other Safety strap Seat restraint Smoke masks	Engine fire supp Fire extinguisher Life preserver Life raft O^2 mask O^2 system (aircraft) O^2 system (portable) Other Safety strap Seat restraint Smoke masks	Belt & harness Climb belt Ear protection Eye/face protect Fall Protection Foot Protection Full body Gloves Hard Hat Helmet None Other Respiration Seat belt Shldr harness	Ear protection Eye/face protect Foot protect Full body Gloves Harness Helmet/hardhat None Other Respirator Restraint dev Safety belt Seatbelt	**(See Note 1)**	**(See Note 1)**	**(See Note 1)**	Engine fire supp Fire extinguisher Life preserver Life raft O^2 mask O^2 system (aircraft) O^2 system (portable) Other Safety strap Seat restraint Smoke masks

CREW POSITION	
FLIGHT (See Note 2)	
First Letter	**Second Letter**
E (evaluator) F (qualified) I (instructor) M (mission qualified) O (senior evaluator) S (student) U (unqualified) X (other/inactive)	A (other nonrated crew) B (boom operator) C (copilot) E (electronic warfare officer) F (flight engineer) G (aerial gunner) H (flight nurse) J (pararescue member) K (comm syst officer) L (loadmaster)

	N (navigator) P (pilot) R (nav-bombardier) S (flight surgeon) W (weapon syst officer) Z (air battle staff)

RPI CODE

FLIGHT

0 (nonrated duty)	1 (pilot)
2 (navigator or observer)	3 (staff or support, wing level or below, nonflying)
4 (staff or support, above wing level, nonflying)	5 (flight surgeon)
6 (staff or support, wing level or below, flying)	7 (Air Force exchange position)
8 (staff or support, above wing level, flying)	

EJECTION/BAILOUT ATTEMPT

FLIGHT

Bailout atmpt succ	Bailout atmpt unsucc
Inadv/mech init-succ	Inadv/mech init-unsucc
No ejection seat	Not initiated
Other crew init succ	Other crew init unsucc
Self init succ	Self init unsucc

NIGHT VISION DEVICE

FLIGHT

FLIR	LANTIRN
Other	NA (not applicable/available)
None	NVG (type and nomenclature)

PROPERTY COMPONENT

FLIGHT	FLIGHT-RELATED	FLIGHT UNMANNED VEHICLE	GROUND	MISSILE	EXPLOSIVES	SPACE	FOD	MISC AIR OPS
Aircraft Blimp/dirigible Glider Helicopter Other Ultralight	Aircraft Blimp/dirigible Glider Helicopter Other Ultralight	Aircraft Blimp/dirigible Glider Helicopter Other Ultralight	Aircraft Building Equipment Explosive Devices Furnishing Hand Tools Other Power Tools Vehicle	Aircraft Bomb trailer Loader Missile Other	**(See Note 1)**	Booster Other Satellite Stand Support Equip	**(See Note 1)**	Aircraft Blimp/dirigible Glider Helicopter Other Ultralight

PROPERTY DESCRIPTION

FLIGHT	FLIGHT-RELATED	FLIGHT UNMANNED VEHICLE	GROUND	MISSILE	EXPLOSIVES	SPACE	FOD	MISC AIR OPS
(See Note 3)	(See Note 3)	(See Note 3)	Ambulance ATV Bicycle/ pedcycle Bus Forklift Hangar/Aircraft /etc. Manual hand tools Mechanical machines, *Industrial *Office *Domestic Nonpowered AGE Other Other 2 wheel Other 4 wheel Other truck > 2.5 ton Powered AGE Powered hand tools Powered machines *Industrial *Office Semi truck w/o trailer Semi truck w/trailer Trk < 2.5 ton	(See Note 3)	(See Note 3)	(See Note 3)	(See Note 3)	(See Note 3)
OBJECT/VEHICLE ACTIVITY AT TIME OF MISHAP								
FLIGHT	**FLIGHT-RELATED**	**FLIGHT UNMANNED VEHICLE**	**GROUND**	**MISSILE**	**EXPLOSIVES**	**SPACE**	**FOD**	**MISC AIR OPS**

Acrobatics ACT (all types) Approach Cargo/pers deliv Climb Confid maneu Cruise Hover Intercept Land app Landing LOWAT Low level nav Other Recovery Refueling Remote Approach Remote Landing Takeoff Test flight TO abort Touch-n-Go Weapons deliv	Acrobatics ACT (all types) Approach Cargo/pers deliv Climb Confid maneu Cruise Hover Intercept Land app Landing LOWAT Low level nav Other Recovery Refueling Remote Approach Remote Landing Takeoff Test flight TO abort Touch-n-Go Weapons deliv	Acrobatics ACT (all types) Approach Cargo/pers deliv Climb Confid maneu Cruise Hover Intercept Land app Landing LOWAT Low level nav Other Recovery Refueling Remote Approach Remote Landing Takeoff Test flight TO abort Touch-n-Go Weapons deliv	Acft shutdown Acft taxi Acft tow Backing Being passed Moving fwd Mowing Other Parked Passing Plowing Pushing Stopped Towing Turning U turn Yielding	Alert monitoring Arm/dearm Climbing Cruise/coasting Eng/motor ign Generation Inflt launch Initial Stage Inst/remove Maintenance Norm cntdown Ops test Other Para deploy Pitch prog Prior a/c sep Readiness chk Rec/descent Roll prog RPV/payload sep Shutdn/abort Storage Terminal/self dest Transporting Up/down loading	Functional use Loading Maintenance Operational Other Storage (hand) Storage (static) Testing Transport	Deorbit/recovery Insertion Launch Orbit Other Prelaunch Test	(See Note 1)	Acrobatics ACT (all types) Approach Cargo/pers deliv Climb Confid maneu Cruise Hover Intercept Land app Landing LOWAT Low level nav Other Recovery Refueling Remote Approach Remote Landing Takeoff Test flight TO abort Touch-n-Go Weapons deliv
MAJOR SYSTEM THAT FAILED								
FLIGHT	**FLIGHT-RELATED**	**FLIGHT UNMANNED VEHICLE**	**GROUND**	**MISSILE**	**EXPLOSIVES**	**SPACE**	**FOD**	**MISC AIR OPS**
Airframe Bleed Air Boom AR System Boundary layer control system	Airframe Bleed Air Boom AR System Boundary layer control system	Airframe Bleed Air Boom AR System Boundary layer control system	(See Note 1)	Airframe Battery Carrier rel Cartridge DRPE Elect trans	Booster Fuze Guidance Ignitor Initiator None	Booster Other Spacecraft/payload Support equip Vehicle	(See Note 1)	Airframe Bleed Air Boom AR System Boundary layer control system

Communication system Computer Control Display Electrical system Engines- reciprocating Engines-turbine Flight controls Fuel system Hydraulic system Instruments Landing gear Ordnance Other Oxygen system Pitot/Static System Pneumatic system Power plant components Pressurization, bleed air Probe & Drogue AR System Prop System Rotor System Survival life support equipment Susp/Rel Sys Warning systems	Communicatio n system Computer Control Display Electrical system Engines- reciprocating Engines- turbine Flight controls Fuel system Hydraulic system Instruments Landing gear Ordnance Other Oxygen system Pitot/Static System Pneumatic system Power plant components Pressurization, bleed air Probe & Drogue AR System Prop System Rotor System Survival life support equipment Susp/Rel Sys Warning systems	Communication system Computer Control Display Electrical system Engines- reciprocating Engines-turbine Flight controls Fuel system Hydraulic system Instruments Landing gear Ordnance Other Oxygen system Pitot/Static System Pneumatic system Power plant components Pressurization, bleed air Probe & Drogue AR System Prop System Rotor System Survival life support equipment Susp/Rel Sys Warning systems		Electrical FRTS FTCE Fuel/oil Heat/vent Hoist Hydraulic Initiation Launch facil Launch rel Mechanical Other Pneumatic Propulsion PSRE RCSEF Reentry veh Squib Storage/Handli ng Telemetry Work cage/Plat	Other Release			Communication system Computer Control Display Electrical system Engines- reciprocating Engines-turbine Flight controls Fuel system Hydraulic system Instruments Landing gear Ordnance Other Oxygen system Pitot/Static System Pneumatic system Power plant components Pressurization, bleed air Probe & Drogue AR System Prop System Rotor System Survival life support equipment Susp/Rel Sys Warning systems
MISSION SYMBOL								
FLIGHT								

A (CA or ARS CF coded)	L (industrial contingency)
M (industrial cargo)	N (industrial training)
O (operations)	Q (simulator)
S (support)	T (training)
BARRIER/CABLE TYPE	
FLIGHT	
Barrier	Cable
None	Other
MAJCOM	
ALL CATEGORIES	
AAG (AF Audit Agency)	ACC (Air Combat Command)
ACD (Air Force Academy)	AET (Air Education & Training Command)
AFE (US Air Forces in Europe)	AFR (AF Reserve)
AMC (Air Mobility Command)	ANG (Air National Guard Readiness Center)
APC (AF Personnel Center)	AWS (Air Weather Service)
BDA (AF Base Conversion Agency)	CBT (AF Operations Group)
CCE (AF Cost Analysis Agency)	CFH (AF History Support Office)
CMC (AF Communications Agency)	CSA (AF Studies and Analysis Agency)
DOC (AF Doctrine Center)	EEC (AF Center for Environmental Excellence)
ESC (AF Civil Engineering Support Agency)	ESW (11th Wing)
FMC (AF Frequency Management Agency)	FSA (AF Flight Standards Agency)
HRC (AF Historical Research Agency)	ICT (AFNews Agency)
ISC (AF Inspection Agency)	ITC (Air Intelligence Agency)
LCT (AF Legal Services Agency)	LMA (AF Logistics Management Agency)
MEA (AF Mgmt Engineering Agency)	MOA (AF Medical Operations Agency)
MSA (AF Medical Support Agency)	MTC (AF Materiel Command)
MWR (AF Services Agency)	OSI (AF Office of Special Investigations)
OSP (AF Security Police Agency)	PAF (Pacific Air Forces)
PCA (AF Pentagon Comm Agency)	POA (AF Personnel Operations Agency)
RBO (AF Review Boards Agency)	REA (AF Real Estate Agency)
RPC (Air Reserve Personnel Center)	SAJ (US Strategic Command)
SFT (AF Safety Center)	SOC (AF Special Operations Command)
SPC (AF Space Command)	SSE (Joint Services SERE Agency)
TEC (AF Operational Test & Eval Center)	USL (USAF At Large)
ZEC (AFELM US Central Command)	ZLA (AFELM US Atlantic Command)
ZPA (AFELM US Pacific Command)	ZSA (AFELM US Southern Command)
ZSD (AFELM US Transportation Command)	ZVA (AFELM US Special Operations Command)
GRADE	
ALL CATEGORIES (see note 4)	
AS1-AS19 (administrative service)	CDT (academy cadet)

E1-E9 (enlisted)	GM13-GM19 (general manager)
GS1-GS19 (general schedule)	LA1-LA9 (foreign national)
NA1-NA15 (trades and crafts)	NL1-NL15 (trades and crafts work leader)
NS1-NS15 (trades and crafts supervisor)	O1-O10 (officer)
CC1-CC5 (trades and crafts child development)	OSI (OSI agent)
PS1-PS19 (patron service)	ROTC (ROTC cadet)
SES1-SES6 (senior executive)	UA1-UA9 (universal/annual)
UNK (unknown)	W1-W4 (warrant officer)
WB1-WB19 (wage board)	WG1-WG19 (wage grade)
WL1-WL19 (wage leader)	WS1-WS19 (wage supervisor)

1. Insert an entry as needed. No look-up table is available or required.
2. Use 2-letter flight authorization code from AFI 11-101, *Flying Hour Program Guidance and Procedures*.
3. Use property description nomenclature from Air Force publications when appropriate.
4. This is not a true look-up table but a guide to the types of grade structures used.

Chapter 5

FORMAL SAFETY REPORTS

5.1. General Information. Formal safety reports present detailed information, both factual and analytical, about mishaps. They are made up of AF Form 711-series forms and attached exhibits. All forms in the AF Form 711-series are licensed as "Safety Investigation Reports" (RCS: HAF-SE(AR) 9404). Safety investigation reports are prepared during declared or war emergency conditions (emergency status code C-2). Formal safety reports are used solely for purposes directly related to mishap prevention. Thorough documentation of serious mishaps is highly desirable, since close review of formal safety reports can lead to preventive actions not apparent to field investigators in the course of their investigations. This chapter contains instructions for completing formal reports. Chapters 7 through 13 provide detailed instructions for preparing formal reports for each category of mishap. Investigating MAJCOMs or HQ AFSC may direct preparation of a formal report for any mishap, even under circumstances where this instruction does not specifically require one.

5.2. General Composition of Formal Reports:

5.2.1. The formal report may have one or two parts. Both one- and two-part reports must use AF Form 711.

5.2.2. All formal Privileged reports must have two parts: Part I, Facts; and Part II, Board or Investigator Analysis. Part I contains factual information that may be disclosed outside the Air Force; Part II contains the privileged portions of the formal report and will not be disclosed. In this way, the two-part report retains privileged information and protects the privacy of medical information.

5.2.3. Formal non-privileged reports are assembled in one part. They contain both factual information and the investigator's analysis and conclusions.

5.3. Waiving the Formal Report. HQ USAF/SE, in conjunction with the investigating MAJCOM, may waive certain formal reports. The SIB or investigating officer requests the waiver from the MAJCOM during the investigation. The MAJCOM sends a message to HQ USAF/SE with enough information to justify the waiver. As a general rule, HQ USAF/SE will only consider waivers for mishaps involving known materiel deficiencies for which corrective actions have been established or when message reports sufficiently support the findings, causes, and recommendations. HQ USAF/SE normally will not waive formal reports for mishaps involving personnel factors (such as human performance failures and inadequate supervision). Large scale SIB investigations typically require formal reports. HQ AFSC evaluates each waiver request on a case-by-case basis, considering all the message reports, the waiver request, supporting material and other factors, and either approves or disapproves the waiver by the end of the next duty day after receipt. When HQ AFSC waives the formal report, submit command indorsements based on the final message report (see chapter 6).

5.4. Preparing the AF Form 711 Series:

5.4.1. **AF Form 711, USAF Mishap Report.** Fill out AF Form 711 on each flight, flight-related, flight-unmanned vehicle, missile, space, nuclear, ground, and explosives mishap requiring a full formal report. Place the form in Part I of the report at Tab A. In most cases, the instructions on the form explain the required entries. See figure 5.4 for filling in blocks where the instructions are not self-explanatory.

5.4.2. **AF Form 711B, Aircraft Flight Mishap Report.** Most of the items in the form are self-explanatory. This form is placed in Part I of the report. Do not include information learned solely from confidential sources. Only include information which can be supported by other factual data in Part I. See figure 5.5 to fill out those parts of the form that are not self-explanatory.

5.4.3. **AF Form 711C, Aircraft Maintenance and Materiel Report.** The form is self-explanatory. Refer to paragraph 2.4 in determining man-hour and cost entries.

5.4.4. **AF Form 711H, USAF Mishap Report Checklist and Index.** Use this form to ensure reports are uniform and complete. Place an "X" for each item in the columns "Not Applicable," "Applicable Not Attached," or "Attached." When checking the "Applicable Not Attached" block, explain why in the "Remarks" section. Estimate the date the missing attachment will be sent for inclusion in the report. If an attachment will be sent later, insert a page with the proper lettered tab in the report. Later, when the attachment is sent to recipients of the report, it can put it in the report at the proper tab. Omit tabs for those items which are not applicable. In assembling the report, place AF Form 711H on top of Tab A.

5.4.5. **Exhibits.** Place additional documents as needed at the tabs listed on the AF Form 711H. Include only exhibits supporting the investigation, analysis, findings, and recommendations. Fully discuss them in the analysis at Tab T. Include copies of applicable portions of the publications in Tab T (as the documents appeared at the time of the mishap) whenever

findings or recommendations involve deficiencies in or changes to technical orders, flight manuals, policy directives, instructions, etc. Do not include AF Forms 847 or AFTO Forms 22 with the report.

★5.4.6. **Assembling the Formal Report.** Assemble the report in a three ring binder, using standard dividers labeled A through Z. Type on both sides of 8.5 by 11 inch paper, long edge binding, but leave a 1.5 inch gutter margin. Arrange the tabs in alphabetical order, with Tab A on top. Number all pages in order within the tab (for example, A-1, A-2, X-1, X-2, Y-1, Y-2).

★5.4.6.1. For bulky two-part reports, place part I and II in separate binders.

★5.4.6.2. For non-privileged reports, place all of the report in one binder of an appropriate size or suitable 8.5 by 11 inch heavy-duty folder.

5.4.7. **Marking Reports For Official Use Only and Special Handling.** For classified pages, use the proper security classification markings from AFI 31-401. For unclassified pages, use the following marking guidance:

★5.4.7.1. Part I. Part I of privileged or non-privileged formal reports contains factual information only and are fully releasable. Do not place markings on unclassified pages in Part I of two-part formal reports indicating special handling requirements, for example "FOR OFFICIAL USE ONLY".

5.4.7.2. Part II. Mark each page in Part II of formal reports with figure 4.1.

5.4.7.3. Covers. Mark the covers of privileged formal reports with figure 4.1 and add the following statement:

COPYING OR RELEASING ANY PORTION OF THIS REPORT IS PROHIBITED WITHOUT THE EXPRESS WRITTEN PERMISSION OF THE AIR FORCE CHIEF OF SAFETY..

5.4.7.4. Non-privileged Reports. Do not place markings on unclassified pages of non-privileged reports indicating special handling requirements. In addition, non-privileged report covers will have the following marking:

COPYING OR RELEASING ANY PORTION OF THIS REPORT IS PROHIBITED WITHOUT THE EXPRESS WRITTEN PERMISSION OF THE AIR FORCE CHIEF OF SAFETY.

5.5. What To Include in Formal Reports. For non-privileged reports, include at least Tabs B, R, S, T, U and a memorandum of transmittal (paragraph 5.12.1 and figure 5.6). Privileged reports should at least include all the tabs in paragraphs 5.5.1 and .2. If certain normally required forms or exhibits do not add to the report due to the mishap's circumstances, send HQ AFSC/JA a message request to omit them. Tab Z is optional for both privileged and non-privileged reports. Include a computer disk(s) containing the ASCII text or Word 6.0 documents of the formal report in the copy sent to HQ AFSC/JA.

5.5.1. **Part I--Facts:**

5.5.1.1. Tab A, AF Form 711, **USAF Mishap Report**. Use with every two-part formal report (flight, flight-related, flight-unmanned vehicle, missile, space, nuclear, and, when applicable, explosives) except ground (aircraft involvement) and ground (space involvement) safety investigation reports.

★5.5.1.2. Tab B, Preliminary Message Report. Place the fully releasable preliminary message report in Tab B. All other message traffic, including the consolidated mishap report, should be placed at the end of Tab T.

5.5.1.3. Tab C, AF Form 711B, **Aircraft Flight Mishap Report**. Submit on Class A and B (and Class C, if applicable) flight, flight-related, flight-unmanned vehicle, and manned or unmanned full scale remotely piloted vehicle (RPV) mishaps. See figure 5.5. Use one form for each aircraft involved.

5.5.1.4. Tab D, AF Form 711C, **Aircraft Maintenance and Materiel Report**. Use for the following Class A, B, and C mishaps:

- Flight mishaps.
- Flight-related mishaps.
- Flight-unmanned vehicles mishaps.
- Ground (aircraft involvement) mishaps when maintenance or materiel are involved in the mishap. Do not use the AF Form 711C for Class C ground (aircraft involvement) mishaps.

5.5.1.5. Tab G, Flight and Personnel Records. Include a copy of the flight record page showing the most recent flight time. (Do not include mishap flight time.) The record should be closed out as of the date of the mishap. Include flight time in each aircraft flown. Break down information according to aircraft designation, inclusive dates flown, FP or IP time, and total time. Include sorties and hours in the last 30, 60, and 90 days.

5.5.1.6. Tab H, AFTO Form 781 Series. Include a copy of the AFTO Form 781, AFORM Aircrew/Mission Flight Data Document (or proper missile maintenance form), if it adds to the report.

5.5.1.7. Tab I, Product Quality Deficiency Reports (DR). Include only DRs with remarkable (other than normal) TDR results. However, provide a complete list of all the other DRs not included. Identify each DR by originator, date-time group, report control number (RCN), name of part (NOM), and part number (MFR PN).

★5.5.1.8. Tab J, Technical and Engineering Evaluations of Materiel. If DoD personnel or contractors provided TDRs or engineering evaluations, include them here. Do not provide a promise of confidentiality to DoD Personnel. Some TDRs are not finished in time for the field investigator to put them in the report, but include all available reports at this tab. Include on-scene evaluations submitted by DoD personnel at this tab. See figure 3.1 for the evaluation format. The SIB president may promise confidentiality for technical and engineering evaluations prepared by civilian contractors who design, manufacture, or maintain equipment involved in a mishap when necessary. Such a confidential report will be placed in Tab W. Any analysis referring to other privileged information (i.e., witness testimony, board conclusions, etc.) should be included in an addendum which is placed in Tab W. Factual reports or information provided by a contractor which the contractor's representative has determined does not require the promise of confidentiality may be placed in Tab J followed by a memorandum of acknowledgment (figure 3.2). Joint ALC and contractor factual reports should also be placed in Tab J.

5.5.1.9. Tab K, DD Form 175, **Military Flight Plan** (or Appropriate Forms). Include a copy of the clearance form and a weather summary. Include flight orders of the pilot or crew if prepared. Include a passenger manifest if the mishap aircraft was carrying passengers during the mishap flight. If there was no manifest, use any document, paper, or list giving the complete name, grade, and SSAN of all crew and passengers.

5.5.1.10. Tab L, DD Form 365-4, **Form F -Weight and Balance Clearance Transport/Tactical**. Include a copy of the weight and balance computations on file for the flight involved. If the SIB prepares a separate weight and balance form using available data to determine weight and CG at the time the mishap occurred, do not include it here; instead, place it Tab T of Part II of the report.

★5.5.1.11. Tab M, Certificate of Damage. This lists the total damage to all government property, materiel, and equipment. Include the maintenance officer's detailed evaluation, statement of damage, and the cost of parts replaced and man-hours required for repair. See paragraph 2.4 for instructions on determining estimated and actual man-hours for repair. Indirect costs as defined in paragraph 2.4.2 should not be included in this tab.

★5.5.1.12. Tab N, Transcripts of Recorded Air-to-Ground and Aircraft-to-Aircraft Communications. These are written transcripts of recorded voice communications. Begin the transcript as early in the mishap sequence as is practical and end the transcript when all damage and injury has occurred. Long term rescue/SAR transmissions need not be included. Because these transcripts are factual data, they often provide a basis for information in the factual summary of circumstances. Transcripts of intracockpit communications are placed in Tab O.

5.5.1.13. Tab O, Any Additional Substantiating Data or Reports. This is supporting data not otherwise defined. It can include local operating instructions (OI), directives, approach and landing charts, training records, flight data recorder information, transcripts from cockpit voice recorders, non-privileged witness statements and other forms. If a brief document is cited by the SIB (such as a three-page local OI), place it with this tab.

5.5.1.13.1. Do not mark, highlight, or extract a particular page to show the SIB's exact area of interest. (Highlighted pages are placed at Tab T.) For lengthy documents, it is sufficient to show a listing of documents or records reviewed by the SIB and their effective dates.

5.5.1.13.2. Films or videotapes depicting the actual mishap sequence or mishap scene, but not containing any privileged material, should be located with this tab. List the tape or film on the index page and give the original to the AFI 51-503 Accident Investigation Board (AIB), with instructions to mail it to HQ AFSC/JA when the accident investigation is complete.

5.5.1.14. Tab P, Statement of Damage to Private Property. Omit if no private property was damaged in the mishap. Describe such damage at this tab. If the claims officer's damage statement is not yet available, the investigating officer includes a statement of estimated damages.

5.5.1.15. Tab Q, Orders Appointing SIB. Include one copy of the orders appointing the SIB (or investigating officer). The orders must contain the full name, rank/ grade, SSAN, organization, and complete official mailing address for each appointed person.

5.5.1.16. Tab R, Diagrams (Fallout, Impact Area, etc.). Ensure diagrams are self-explanatory, indicating wreckage patterns, impact areas, or association with structures, facilities, etc.

★5.5.1.17. Tab S, Photographs. Well-defined 8 by 10 inch glossy photographs help in mishap analysis. Use them to show damage, impact areas, metal fractures, flight path, vehicle travel, etc. Send these to HQ AFSC as part of the report. Use of scanned color images for reproduction in the formal report is preferred over pasting of actual photographs.

5.5.1.17.1. Do not include photographs of deceased personnel in the safety report.

5.5.1.17.2. Number the pages containing photographs (S-1, S-2, etc.), but do not mark the photographs themselves. Place an index of photographs at Tab S to aid reviewers. Do not refer to privileged information on the page captions or in comments on the index.
5.5.1.17.3. Staged photographs are placed at Tab T near the related narrative. For example, include pictures of models showing flight paths in a midair collision at Tab T. Pointing with a finger or other device at a portion of wreckage does not make the photograph staged. Assembling or reconstructing damaged parts or aligning parts to show fire patterns or impact marks are examples of staged photographs. Depictions of cockpit indications for a given set of assumptions made by the SIB or described in witness testimony are staged photographs. When investigators include privileged information on a transparent overlay, place the photograph with the overlay in Tab T and the photograph without the overlay in Tab S. Only include photographs aiding in understanding the mishap, and reference them in the analysis at Tab T.
5.5.1.17.4. Hold all photographs and videotapes taken by the SIB, except those staged for analysis, for use in the accident investigation. Instruct the accident investigation board that the photographs and videotapes are to be forwarded to AFSC/JA at completion of the accident investigation.
5.5.2. **Part II--SIB or Investigator Analysis:**
★5.5.2.1. Tab T, Investigation, Analysis, Findings, and Recommendations. This is the most important part of the report. It draws on all portions of the report to provide a complete picture of what happened. It is a thorough analysis of all evidence and the findings, causes, and recommendations. This section records the opinions of the SIB, and it either accepts or rejects all scenarios or theories in the report. Only in the case of a minority report are there differing findings, causes, or recommendations. Life sciences recommendations related to causal findings will be included with the other SIB recommendations. Place all privileged status messages and the Final CMR in this tab after MAJCOM release. The layout should be as follows:

- I. Executive Summary - provide a condensed version of the mishap report that encapsulates the mishap sequence, analysis, and board's primary findings, causal factors, and recommendations. This should be two or three page in length.
- II. Mishap Sequence
- III. Investigation and Analysis
- IV. Findings
- V. Recommendations
- VI. Other Findings and Recommendations of Significance

5.5.2.1.1. Whenever findings or recommendations involve deficiencies in or changes to technical orders, flight manuals, checklists, or directives, include applicable portions of the publications in this tab.
5.5.2.1.2. Locate films or videotapes depicting the actual mishap sequence and containing privileged material with this tab. List the mishap tape or film on the index page. Mail supporting information of this type to HQ AFSC/JA when the mishap investigation is complete and the convening authority has been briefed. Video or computer animations or reenactments of a mishap prepared for or by the SIB are part of the SIB's analysis of the mishap. Also reference these video simulations or reenactments on the tab T index page, and include the video simulation with the copy of the report sent to HQ AFSC/JA. All other copies of the video simulation should be destroyed when no longer needed by the SIB for analysis or briefing. Use of these SIB video simulations for mishap prevention purposes may be authorized by HQ USAF/SE.
★5.5.2.1.3. The SIB's conclusion that a particular paragraph of a document was or was not a mishap factor is privileged. Place highlighted pages or publication extracts revealing the deliberative process of the board in Tab T. This also applies to such documents as training and personnel records.
★5.5.2.2. Tab U, Statements and Testimony of Witnesses and Persons Involved. Investigators take statements from all individuals concerned with the mishap or who were eyewitnesses to it. A promise of confidentiality may be given to any witness who the board president, in his discretion, determines should be extended such a promise. A promise of confidentiality shall not be given on a blanket basis to every potential witness. The promise of confidentiality must be clearly understood by those witnesses extended the promise and they must be given the opportunity to waive any confidentiality. Non-privileged statements will be placed in Tab O.
5.5.2.2.1. Investigators must read the following Promise of Confidentiality advisory to each witness, and must actually read it onto all tape recordings of interviews:

"You are hereby advised that, as a witness to this investigation, your testimony will be used solely for mishap prevention purposes. Your statement will not be made available to anyone other than Air Force officials responsible for the assembly and approval of this investigation's report. The only exceptions to this would be to act on an allegation of false testimony or

investigative misconduct, or to comply with a valid court order on behalf of a defendant in a criminal trial. Your statement may not be used as evidence by the Government in punitive actions or adverse administrative actions, such as a Flying Evaluation Board, a determination of line of duty status or pecuniary liability, or an elimination from military service."

Transcripts of complete interviews must contain this advisory. In cases where witness testimony is summarized by the interviewer, it must be clear that the witness was advised of and understood this advisory.

★5.5.2.2.2. Where a promise of confidentiality has been extended, Figure 5.1 provides a sample witness statement format for use with written, privileged witness statements. Select only meaningful statements and testimony to include in this tab. It is not necessary to publish every statement taken from every individual interviewed. Place the statements and testimony of each individual together in chronological order with the earliest on top to make it easier to compare the individual's impressions. Consider all statements and testimony included at this tab in the analysis at Tab T. Provide a complete list of all witnesses contacted to the AIB after the SIB has completed all of its interviews.

★5.5.2.2.3. Where a promise of confidentiality has not been extended, Figure 5.2 provides a sample witness statement format for use with written, nonprivileged witness statements. Select only meaningful statements and testimony to include in this tab. *It is not necessary to publish every statement taken from every individual interviewed.* Place the selected statements and testimony of each individual together in chronological order with the earliest on top to make it easier to compare the individual's impressions. Provide a complete list of all witnesses contacted to the AIB after the SIB has completed all of its interviews.

5.5.2.3. Tab V, Statements of Persons Cited in Findings. Place endorsed notification memorandums and any statements provided by persons found causal in a privileged safety investigation at this tab (figure 5.3 and paragraph 5.6). Both the acknowledgment and any statement submitted will become part of the report at this tab.

★5.5.2.4. Tab W, Technical and Engineering Evaluations of Materiel. If a contractor who built, designed, or maintained the equipment provides an engineering analysis under a promise of confidentiality, include the evaluation in this Tab. If possible, include a factual summary in Tab J. Also include memorandums of acknowledgment on protection of privileged data signed by these contractors when their evaluations are included in privileged formal reports. Use figure 3.2 format.

5.5.2.5. Tab X, AF Form 711F, **Nuclear Accident/Incident Report:**

5.5.2.5.1. Submit with nuclear accident or incident reports involving:

- Nuclear weapon accidents and incidents.
- Flight and missile mishaps if nuclear material is involved.

5.5.2.5.2. Submit with nuclear reactor system or radiological safety reports involving:

- Nuclear reactor system or radiological accidents and incidents.
- Flight and missile mishaps if nuclear power systems, radioactive material, or radioactive sources are involved.

5.5.2.6. Tab Y, AF Form 711GA, **Life Sciences Report of an Individual Involved in an AF Flight/Flight Related Mishap**. Submit this form and the required narratives as explained in Chapter 13.

5.5.2.7. Tab Z, SIB Proceedings. This tab is optional. SIBs may use this tab to tell reviewing agencies about investigation problems and make recommendations for improving reporting and investigating procedures. Comments on technical assistance coordinated through HQ AFSC are also appropriate.

★5.6. Notifying Persons Found Causal in Privileged Safety Investigation Reports. When Air Force personnel are found causal in the findings of an Air Force safety investigation report, they will be shown the final message report and may submit a witness statement commenting on the findings. Access to Part II information or the Formal report is not authorized. This statement is in addition to any other witness statements or testimony provided by these individuals. They must submit a statement, though in doing so they may simply acknowledge the opportunity to comment and decline to do so. Use figure 5.3 to notify these persons. Both the acknowledgment and any statement submitted will become part of the formal report at Tab V. Tab V statement procedures are only used with privileged reports.

5.6.1. **Notifying Military and Civilian Personnel Under Air Force Jurisdiction:**

5.6.1.1. Safety Investigation Formal Reports. These procedures apply to SIB reports, indorsements by reviewing commanders, and HQ AFSC MOFEs. If the person is:

5.6.1.1.1. If attached or assigned to the organization having the mishap, the investigator will show the person relevant findings and offer the person a chance to submit a witness statement. Convening authorities send these statements to all Air Force addressees within 30 days of completing the formal report, if the statements were not already included in the basic report. Send copies for non-Air Force agencies to HQ AFSC/JA for forwarding. Do not delay the command review process, including the HQ AFSC MOFE, for statements not received within 30 days after the individual is given a chance to review

relevant findings and submit a witness statement. HQ AFSC holds the MOFE as necessary to allow any individual 30 days to submit a statement if the findings or causes about that person are changed during the review process.

5.6.1.1.2. If attached or assigned to another MAJCOM, the investigator sends a copy of the final message to the person's immediate commander, information copy to the assigned MAJCOM/SE, with a cover memorandum asking the commander to:

- Notify the person and provide that individual a chance to review relevant findings.
- Obtain the witness statement and send it to the convening authority for the investigation.
- Send one copy of the witness statement with the message through channels to the assigned MAJCOM commander. The MAJCOM commander detaches the message and forwards the original witness statement to HQ AFSC/JA, with a copy to the investigating MAJCOM. The assigned MAJCOM transmittal memorandum should either concur with the SIB or investigator (one line suffices) or nonconcur. If the assigned MAJCOM commander nonconcurs, state why. Include any additional preventive action taken.

5.6.1.1.3. If added to the findings, or the person's role in the mishap is changed in the findings during the review process, the safety staff of the commander changing the finding or cause ensures the member is informed of this action using procedures in paragraph 5.6.1.1.1 or 5.6.1.1.2. If this change occurs while preparing the MOFE, HQ AFSC will notify the individual's MAJCOM safety office and provide a draft copy of the MOFE, following the procedures of paragraphs 5.6.1.1.1 or 5.6.1.1.2.

5.6.1.1.4. If a participant in a mishap is physically or mentally incapacitated at the time of the investigation, the immediate commander notifies that individual as soon as medically possible. Make sure the person has the chance to review relevant findings and submit a witness statement.

5.6.1.2. Privileged Safety Investigation Message Reports. When Air Force individuals are found causal in Air Force privileged safety investigation message reports, they have the opportunity to submit witness statements commenting on the causes or findings. They must review the message and write a memorandum to their commander within 30 days. The commander considers the information presented in the statement and, if warranted, issues a status report. If a command indorsement adds an individual to the findings or causes (or changes the person's role in the findings or causes), include a statement indicating the individual was given a chance to submit a witness statement and that the witness statement will be forwarded to HQ AFSC/JA when received.

5.6.2. **Notifying Non-Air Force Military Personnel and Civilians Outside Air Force Jurisdiction.** Non-Air Force personnel are not offered the opportunity to review Air Force safety investigation messages or formal reports, nor to submit witness statements in these cases. This includes Air Force personnel serving outside the Air Force, such as the Defense Logistics Agency.

5.7. Reporting Other Findings and Recommendations of Significance. Include findings developed during the investigation that are not part of the mishap sequence at the end of Tab T. These findings may cover a wide variety of subjects, and their use, content, and format are at the discretion of the SIB president/single IO. Recommendations not related to the causes of the mishap or fatal, major, or minor injuries may also be included as "other findings and recommendations of significance."

★5.8. Reporting Minority Opinions. Findings, causes, and recommendations are determined by the primary members. Primary members that disagree with the results may submit individual minority reports. Minority reports must include reasons for disagreeing, and will include findings and causes, and recommendations if different from those contained in the report. Sign the minority report and place immediately after the authentication page and include them as part of the final mishap message and report.

5.9. Authenticating Formal Reports. Type each primary SIB member's name, grade, and position on the last page of Tab T. Have each concurring member sign above it for authentication of the report or for any changes to the report. If the formal SIB report needs to be changed after it is completed and signed by the board, the primary members of the SIB shall be physically reconvened.

★5.10. Controlling the Formal Report. Once the SIB completes the investigation and finalizes the hard copy report, the SIB recorder will control hard copy report until the convening authority is briefed on the results of the investigation. Upon approval for release, the SIB recorder will control the distribution of the report.

★5.11. Briefing Formal Reports. Once the SIB completes the investigation and finalizes the hard copy report and the final SIB message, the board members will brief the MAJCOM/CC (convening authority) on the results of all Class A aviation and space mishaps or when directed by the convening authority. There will be no intermediate briefings prior to

the MAJCOM/CC briefing. HQ USAF/SE will be the focal point for all briefings to the CSAF for those aviation mishaps involving fatalities or other mishaps when requested.

5.11.1. Safety investigation briefings will be afforded the same protection given the formal report in accordance with paragraphs 1.13 and 1.14. Attendance will be dictated by the senior officer receiving the briefing. The following format will be used to build the briefing:

5.11.1.1. Title Slide: Include mishap type, unit, vehicle or material, date, time of occurrence, and board president.

5.11.1.2. Overview: In bullet format present the basic circumstances of the mishap and give the bottom line causes of the mishap.

5.11.1.3. Board Composition: Show board members as well as technical experts consulted and used at the mishap scene.

5.11.1.4. Aircrew Background. Give a chronological list of assignments for personnel involved and their flying experience. List the aircrew member's name on the slide. Include recent time, activities, and any other significant data or dates. Consider a subjective appraisal of the pilot, if appropriate. If the briefing is a ground (aircraft involvement) mishap and involves maintenance personnel, provide similar experience details to include skill and task training qualification.

5.11.1.5. Sequence of Events. Use as many slides as necessary. Map/route segments, vertical view of maneuvers, artist's conceptions, or models can be helpful. Explain what the plan was, what should have happened if things had gone right, who was in charge, what were the rules of engagement and were they followed, where things went wrong, what should the aircrew have done, and what were the aircraft parameters at ejection or aircraft impact. Follow the same general guidance for ground (aircraft involvement) mishaps.

5.11.1.6. Areas Investigated and Determined Not To Be a Factor. Do not dwell on these. A listing is usually adequate.

5.11.1.7. Areas Found To Be Factors in the Mishap. Discuss each in detail in follow-up slides. Be sure to discuss training, supervision, discipline, tactics, and weather, as appropriate.

5.11.1.8. Findings (including OFSs). Use the number of slides necessary without overcrowding. Do not include the cause analysis after causal findings.

5.11.1.9. Conclusions and Recommendations (including ORSs). Again, use the number of slides necessary without overcrowding.

5.11.1.10. Comments. The mishap unit commander will be asked for comments and should use slides to outline agreement or disagreement with the board, any corrective action taken or contemplated, or what is needed from higher headquarters.

5.11.1.11. Backup slides should be determined by the Board President and could include:

- 72-Hour and 14-Day History. Come prepared to brief the 72-hour and 14-day history. The detailed 72-hour and 14-day history slides will be available as backups.
- Aircraft Maintenance History. Include significant write–ups, TCTOs, and materiel problems.

5.11.1.12. Feel free to include any other pertinent information that supports the findings, conclusions, and recommendations.

5.11.1.13. Remember to include additional findings of significance and their recommendations in the briefing.

5.11.1.14. Visual Aids. Viewgraphs, visual aids, videotapes, and slides should be neat, in a standardized command format. Due to the compressed briefing schedule, major changes to visual aids will be difficult to accomplish. Bring masters of the visual aids. Orient all maps, diagrams, and transparencies to north. Do not use vertical slides. Mount all flips at the bottom on the front of the frame. Accomplish viewgraphs and electronic presentations on Microsoft PowerPoint.

5.11.2. The report or final message will not be distributed prior to the briefing to the convening authority. Once briefed the convening authority has three options:

- Accept the report as written.
- Accept the report with comment. The convening authority will have 7 working days from the date of the briefing to prepare written comments and attach them to the hard copy report and final message as an addendum. Comments raised by the convening authority will be addressed during development of the MOFE. ***NOTE:*** Convening authority shall not hold the final message report beyond this time frame to do staffing of addendum comments.
- Direct the SIB President and its members to conduct additional investigations. The convening authority will provide additional guidance to the board to ensure the report fulfills the purpose, intent, and requirements of the Air Force Mishap Prevention Program. After the SIB reexamines the areas identified by the convening authority and completes their reinvestigation, the convening authority will be rebriefed and have the same three options outlined above. Once this sequence is completed, the SIB will send the final message and distribute the hard copy report.

★**5.12 Forwarding Formal Reports.** Send the original report and two copies of all nonnuclear safety reports to HQ AFSC/JA and appropriate copies to other Air Force agencies according to tables 5.1 through 5.6 via registered mail. For ground mishaps, send only one copy, HQ AFSC needs an original report, and a 3.5" disk containing the ASAP event file. For all other non-nuclear mishaps Include the complete text of all applicable tabs of the formal report on a 3.5 inch disk, in either ASCII or Word 6.0 format, with the original report sent to AFSC. Send nuclear safety reports to HQ AFSC/SEW

according to Chapter 12. Use a memorandum of transmittal (figure 5.6) for each report. The SIB or investigator gives the original s of Part I to the AFI 51-503 Accident Investigation Board.

5.12.1. The memorandum of transmittal (figure 5.6) will list all addressees receiving copies of (or extracts from or attachments to) the report. Number and account for all copies of privileged reports by listing each addressee, including office symbol and copy number, in the "TO" element of the memorandum of transmittal (for example, HQ ACC/SE, 130 Andrews St, Suite 301, Langley AFB VA 23665-2786, copy 4 of 20). The memorandum of transmittal goes before all Tabs in Part I of the report.

5.12.2. Include a statement, signed by the SIB president, certifying the number of copies of the report listed are the only copies the SIB report produced.

5.12.3. Distribution of privileged reports is restricted to those with a need to know in the Air Force. Do not provide copies or extracts to agencies outside the Air Force. If an agency outside the Air Force needs a copy for corrective action, refer to paragraphs 5.12.3.4 and 6.3.2. Distribute within the Air Force as shown in tables 5.1 through 5.6.

5.12.3.1. MAJCOMs may require additional copies to be sent to command headquarters to aid in staffing the report. After completing the command endorsement, destroy all but the file copy.

5.12.3.2. In certain cases, agencies not shown in the distribution tables may have action to take. Send copies of the formal report to all Air Force agencies or organizations tasked in the recommendations. For each report sent to an agency or organization not included in the distribution tables, identify a specific point of contact at the tasked agency as the addressee for the report, and list their name, rank, office symbol, and telephone number in the memorandum of transmittal. If investigators conclude action needs to be taken by an agency outside the convening authority's command, but cannot specifically identify where it must be accomplished, the convening authority's safety office will:

- Locate the responsible agency and provide the investigating officer with a point of contact, or
- Accept initial responsibility for the action by being tasked as OPR in the formal report. In this case, the convening authority's safety office should ensure an extra copy of the formal report is prepared and available for forwarding when the appropriate action agency and point of contact are determined.

5.12.3.3. Notify HQ AFSC/JA by message or telephone before sending copies to any non-Air Force agency (paragraph 6.3.2).

5.12.3.4. If an Air Staff office or FOA is the action agency for a validated recommendation, HQ AFSC prepares the required correspondence (paragraph 6.3.2).

5.12.3.5. HQ AFSC may request (paragraph 3.2.4. may also require) extra copies of reports. Send these copies to HQ AFSC/JA, who will provide them to the proper agency (paragraph 6.3.2).

5.12.3.6. Do not produce "information only" copies of formal reports.

5.12.3.7. The SIB president may keep a complete copy of the formal report (for briefing purposes) for 60 days. List this copy on the memorandum of transmittal and return it to the MAJCOM safety office for disposition.

★5.12.3.8 Wing level units or below destroy formal reports upon receipt of the MOFE. Numbered Air Froces and above destroy formal reports upon final closeout of recommendations. Convening Authority may retain reports according to AFI 37-138. Retention of these reports for other than the convening authority must be approved by HQ AFSC/JA according to AFI 37-138.

★Figure 5.1. Sample Privileged Witness Statement Format.

(Date)

1. I, (Name)_____, (Grade)_____,
(Organization) _____, have been advised by
(Name) _____ of the following:

a. This investigation is being conducted under the provisions of AFI 91-204 solely for the purpose of mishap prevention within the United States Air Force; to determine all factors relating to the mishap and to prevent recurrence.

b. I have been promised confidentiality concerning this statement if I choose to have my statement remain confidential.

c. If I elect to have my statement treated as confidential, this means it will not be distributed outside Air Force nor used as evidence to support any disciplinary action, adverse administrative action such as Flying Evaluation Board, determining line-of-duty status or pecuniary liability, or elimination from the Air Force. The only exception to this would be to act on an allegation of false testimony given to the investigation board or investigative misconduct, or comply with a valid court order on behalf of the defense in a criminal trial.

d. Nonconfidential witness statements may be released to the public pursuant to a Freedom of Information Act request. Only statements given under a promise of confidentiality are protected from release outside safety channels.

e. Whether or not a statement is considered confidential, the chain of command will review the final mishap report, but the chain of command may only use the materials for safety and mishap prevention purposes. When a statement is given under this promise of confidentiality, the chain of command will review the final mishap report, but this statement may only be used for mishap prevention.

2. I understand I am being interviewed as a witness in a mishap investigation and I acknowledge that a promise of confidentiality has been extended to me. I further understand the effect of this promise. I (do) (do not) desire my statement to be treated as confidential.

_____
(Signature)

_____
(Date)

3. (To be completed after the witness has given a statement) I (still desire) (do not desire) to have my statement to remain confidential.

_____
(Signature)

_____
(Date)

(***NOTE:*** This statement is for all aircraft, missile, space, or nuclear mishaps. This format will also be used for those ground or explosives mishaps where HQ USAF/SE has approved privileged status according to paragraph 1.12.2. This figure depicts the approved format and its content only. Use 8-1/2 by 11-inch paper for inclusion in safety reports.)

FOR OFFICIAL USE ONLY.
THIS CONTAINS PRIVILEGED SAFETY INFORMATION. UNAUTHORIZED USE OR DISCLOSURE CAN SUBJECT YOU TO CRIMINAL PROSECUTION, TERMINATION OF EMPLOYMENT, CIVIL LIABILITY, OR OTHER ADVERSE ACTIONS. SEE AFI 91-204, CHAPTER 1 FOR RESTRICTIONS. DESTROY IN ACCORDANCE WITH AFMAN 37-139 WHEN NO LONGER NEEDED FOR MISHAP PREVENTION PURPOSES.

★Figure 5.2. Sample Non-Privileged Witness Statement Format. (Sample format)

1. I, (Name)_____, (Grade)_____,
(Organization) _____, have been advised by
(Name) _____ of the following:

a. This investigation is being conducted under the provisions of AFI 91-204 solely for the purpose of mishap prevention within the United States Air Force; to determine all factors relating to the mishap and to prevent recurrence.

b. I have not been promised confidentiality concerning this statement.

c. This witness statement may be released to the public pursuant to a Freedom of Information Act request.

d. The chain of command will review the final mishap report.

2. I understand I am being interviewed as a witness in a mishap investigation and I acknowledge that a promise of confidentiality has not been extended to me.

_____
(Signature)

_____
(Date)

Figure 5.3. Opportunity To Submit an Additional Witness Statement (Sample Format).

FROM: President, _____ SIB

SUBJ: Opportunity to Submit Witness Statement

1. The SIB investigating the mishap involving _____, which occurred on _____, named you in its safety investigation report.

2. A copy of the final message report is available for your review at _____. You cannot remove the message from that office nor reproduce any portion of it. The message is for official use only, and information contained therein is privileged, not releasable in whole or in part to persons or agencies outside the US Air Force without the express approval of the disclosure authorities specified in AFI 91-204.

3. You are required to indorse the original of this memorandum indicating receipt and your intention to either decline commenting on the findings or provide a witness statement. If you provide a witness statement, it is privileged and becomes part of the safety investigation report. It shall be used solely to determine all factors relating to the mishap and, in the interest of mishap prevention, to preclude recurrence.

4. If you decide to provide a witness statement, deliver one signed, reproducible copy to _____ not later than _____.

(SIB President Signature Block)

1st Ind, (_____)

1. Receipt acknowledged.

2. Intention:

a._____I decline commenting on the safety investigation report findings.

b._____I will submit a statement commenting on the safety investigation report findings and furnish it as instructed not later than _____.

Signature Block of Witness

FOR OFFICIAL USE ONLY.
THIS CONTAINS PRIVILEGED SAFETY INFORMATION. UNAUTHORIZED USE OR DISCLOSURE CAN SUBJECT YOU TO CRIMINAL PROSECUTION, TERMINATION OF EMPLOYMENT, CIVIL LIABILITY, OR OTHER ADVERSE ACTIONS. SEE AFI 91-204, CHAPTER 1 FOR RESTRICTIONS. DESTROY IN ACCORDANCE WITH AFMAN 37-139 WHEN NO LONGER NEEDED FOR MISHAP PREVENTION PURPOSES.
NOTE: The additional witness statement is due 30 days after the witness is notified and has a copy of the final message available for review.

Figure 5.4. Preparing AF Form 711, USAF Mishap Report.

ITEM 2-- Vehicles or Materiel Involved. List the aircraft, missile, space system, nuclear weapon or system, automotive vehicle, ground equipment, explosives item, or any other item involved. Give model designation and serial number of aircraft, missile, or other item if they have numbers. For an automotive vehicle, list type (PMV or GMV), make (Ford, Buick), and body style (2-door sedan, 1/2-ton pickup truck). If the report is on injuries only and no equipment is involved, enter "NA" in this block. If more than one vehicle or item of equipment is involved, list the one most heavily damaged first, followed by the others. (Continue on plain white bond if more space is needed.) This form is used for vehicles when they are involved in aircraft mishaps.

ITEM 3--For Ground Mishaps Only. Leave this block blank. The AF Form 711 is no longer used for ground mishaps.

ITEM 4--Place of Occurrence, State, County, Distance and Direction From Nearest Town. Give the location of the mishap and not the location where trouble first developed. Indicate distances in nautical miles (NM) or statute miles (SM), and points of the compass for direction. Also give latitude and longitude. For an on-base mishap, give the exact location (for example, Bldg T-465, Aircraft Hangar, Luke AFB AZ).

ITEM 6--Day, Night, Dawn, Dusk. Using the Air Almanac, dusk begins at official sunset and lasts 30 minutes. Dawn begins 30 minutes before sunrise and lasts until sunrise.

ITEM 7--Organization Possessing or Owning Vehicle or Materiel at Time of Mishap. Aircraft and missiles are possessed by the organizations that report them on the pertinent Air Force aircraft or missile report. In transferring aircraft and missiles, paragraph 7.2.3 defines possession.

- Enter the base name and installation or location code (given in AFPAM 10-203) where the involved aircraft or missile is stationed.
- Substitute proper units and organizations if the structure of the organization possessing the equipment is not the same as the headings of the boxes in item 7.
- For federalized ANG units, show the gaining command, subcommand or numbered Air Force, and the applicable ANG air division, wing, group, and squadron. For ANG units not federalized, show the ANG organizations and ANG as the MAJCOM.

ITEM 8--If a second vehicle is involved and the organization possessing the second vehicle is different from item 7, list it here. Also use this item if an aircraft is possessed by one organization but the flying hours are reported by another, and cross out the parenthetic note in this item.

ITEM 10--List of Personnel Directly Involved. List the information for each military person or civilian employee in the Federal service involved in the mishap. Include all persons injured on the ground as a result of the mishap. List the operator or person most directly involved first. Army and Navy personnel assigned to the Air Force are shown as Army or Navy. List all passengers aboard mishap aircraft. Identify civilian employees by their employment agency or department (for example, Civ-USAF, Civ-Army, Civ-FAA, and so forth). For missile mishaps, list only those persons directly connected with the mishap, such as project director, guidance technician, or mission controller.

- Assigned Duty. Use abbreviation of duty title. For crewmembers involved in flight mishaps use the duty symbol shown on AFTO Form 781.
- Aero Rating. Use the current rating held, or leave blank if not rated.
- Days Lost on TT Only. If lost workdays will continue after the report is sent in, use an estimate of the total.

ITEM 11--Factual Summary or Circumstances. This summary of the mishap may be disclosed under the Freedom of Information Act. Therefore, there are two main considerations for completing this item:

- The summary must be completely factual. It will not draw on privileged sources. Do not use any information in Part II of the report not found in the exhibits in Part I. For example, do not include statements indicating what the pilot heard, felt, or saw.
- The Factual Summary of Circumstances must lead the reader through the sequence of events involved in the mishap.
- To meet these objectives, do the following:
- Present the summary in sequence.
- List the facts, conditions, and circumstances just as they were discovered by the investigators, without reference to attachments.

Figure 5.4. Continued.

- State how the mishap occurred, not why. Do not discuss the importance of facts or how they relate to investigative conclusions.
- Provide as complete a factual summary as possible. Many requests under the Freedom of Information Act are for an account of the mishap, but not for the report itself. In these cases, only the factual summary of circumstances is released.
- In rare cases, there is not enough factual information available for an understandable summary. When this is the case, certain information given by witnesses may add to the narrative without implying investigative conclusions. If it is absolutely necessary to use this information, style the narrative so the information is not attributed to any individual, and allow the witness to review the summary and approve its release. Attach a signed statement approving the release to the memorandum of transmittal to HQ AFSC/JA.

Figure 5.5. Preparing AF Form 711B, Aircraft Flight Mishap Report.

ITEM 1--Mishap Class. If the aircraft is destroyed, mark both "A" and "DEST."

ITEM 2--Aircraft MDS and Serial Number. Give complete MDS, with block number and prefixes if they apply.

ITEM 3--Date. Enter the local date of the mishap, not the Zulu or CUT date. Use six digits to express the year, month, and day (YY-MM-DD). If the exact date of the mishap must be estimated, add "(EST)" after the date.

ITEM 4--Unit Control Number. This is the mishap event number described in paragraph 4.8.2.

ITEM 5--Refer to AFI 21-103, *Aircraft, Missile, and Equipment Accountability* and the *Aerospace Vehicle Report (RCS: 1-HAF-A1)*. The maintenance investigator can assist.

ITEM 6--Operator at Controls.

ITEM 6A. "Operator" means the pilot who was at the controls at the time the mishap occurred.

ITEM 6B. "Component" is one of the following:

- REGAF. Member of the regular Air Force.
- AFRES. Member of the US Air Force Reserve while in the active military service.
- ANGUS. Member of the ANG of the United States while in active military service.
- ERIN. Member of the US Air Force Reserve not on active duty (including inactive personnel on temporary training duty).
- ANG. Member of the Air National Guard of the United States while not in active military service.
- RAF, USN, Civ, etc., as applicable.
- If assigned to one organization for duty, but attached to another for flying, fill out the blocks for both "assigned organization" and "attached organization for flying."

ITEM 6C. "Position in aircraft at time of mishap," should have only one block marked for each pilot. "Front" and "Rear" are only used for tandem seating aircraft (such as T-38 or F-15E). For example, the copilot position in a B-1B would only be marked "Right," not "Front" and "Right."

ITEM 10--Clearance From: To: State the place where the flight originated, and the cleared destination. Indicate the type of clearance (there may be more than one type, for example: VFR and LOCAL, or IFR and AIRWAYS).

ITEM 12--Type of Mission. Use AFTO Form 781 mission symbol for the mishap flight.

ITEM 13--Altitude or Elevation. This is the altitude or elevation where the mishap occurred. Express flight altitude as MSL or FL and AGL. If the mishap occurred as a result of collision with the ground (excluding collisions preceded by stalls, spins, spirals, explosions, or airframe failures), indicate terrain elevation.

ITEM 14--Phase of Operation. Select only one of the following phases of operation:

- Engines running, not taxiing.
- Taxiing:
  - To takeoff.
- Takeoff:
  - Roll.
  - Initial climb (within 5 miles of airport).
  - Discontinued (including all attempts to stop the takeoff run or climb by reducing power, using brakes, or other methods of slowing or stopping).
- In flight:
  - Normal cruise.
  - Acrobatics (including intentional maneuvers resulting in abrupt changes in speed, direction, or altitude).

- Climb to cruise altitude, change of altitude, and so forth.
- Refueling.
- Air-to-ground gunnery, rocketry, or bombing.
- Air-to-air gunnery or rocketry.
- Low-level flight (prolonged, according to directed mission requirements. This does not mean "buzzing" or confirmed violations of AFI 11-206, *General Flight Rules*).
- Descent (prolonged, such as jet penetration, letdown, and so forth).
- Aerial delivery of personnel or equipment.
- Landing:
- Approach (all legs in landing pattern, radar and ILS or MLS included).
- Flare and touchdown.
- Roll (ends when pilot adds power for touch-and-go or go-around, or when the aircraft slows to taxi speed to turn off the runway.
- Other.

- Go-around (ends when power can be reduced and the aircraft can maneuver freely).
  - Premeditated (including touch-and-go).
  - Unpremeditated (originally intended to make full-stop landing).
- Ground mishap (no intent for flight):
  - Parked.
  - Towed.
  - Taxiing.

ITEM 15--Type of Mishap. Types of mishaps are:

- Hard Landing. Stalling in or flying into runway or other intended landing space while landing.
- Collapse or Retraction of Landing Gear. All of these occur on the ground, except those cases defined as wheels-up landings.
- Undershoot. Landing short of runway or other intended landing space.
- Overshoot. Landing too fast or too far down the runway.
- Collision With Other Aircraft.
- Collision With Ground or Water. Excludes collisions preceded by stalls, spins, spirals, explosions, or airframe failures. Do not use when pilot or crew ejects or bails out.
- Other Collisions. Collisions with any objects other than ground, water, or other aircraft. Excludes collisions preceded by stalls, spins, spirals, explosions, or airframe failures.
- Spin or Stall. Includes all mishaps where the aircraft spins or stalls into the ground or water. Excludes hard landings, stalls occurring above the landing space while leveling off, airframe failures, midair collisions, and explosions.
- Fire or Explosion on Ground. All mishaps resulting from fire or explosion on the ground.
- Fire or Explosion in Flight. All mishaps resulting from fire or explosion in the air.
- Airframe Failure. All mishaps involving failure of any part of the airframe, such as wing spars, empennage, hinges, and fuselage skin even though the aircraft lands safely without further damage. This also includes in-flight equipment losses not resulting from action or inaction of personnel.
- Abandoned Aircraft. Ejections, or all personnel capable of piloting an aircraft abandon it in flight. Excludes spins or stalls, fire or explosion in the air, airframe failure, and collisions.
- Propeller or Jet Blast. Injury or property damage resulting from contact with propellers or from propeller or jet blast.
- Equipment Loss in Flight. Mishaps where aircraft equipment, such as canopies, hatches, or drop tanks, is jettisoned or detached from the aircraft.

ITEM 17--Airfield Data.

Item 17E, "Distance of touchdown from runway" means distance from the approach or departure end of the runway to the first touchdown or impact point.

Item 17J, "Conditions affecting occurrence." Use this block to record if the aircraft had a crash position indicator (CPI), emergency locator transmitter (ELT), or any other emergency locating device installed. Report if it operated and whether or not it was used to locate the aircraft or crew; "Operated but not used, etc." (Analysis of the emergency locator device's effectiveness belongs in Tab T).

★Figure 5.6, Sample Memorandum of Transmittal.

MEMORANDUM FOR HQ AFSC/SEG

FROM: Safety Investigation Board

SUBJECT: Memorandum of Transmittal for Formal Report of Class A Mishap, 96/03/07, ABCD, 001A

The attached formal report is forwarded for your review and action as required by AFI 91-204, distribution as shown:

HQ AFSC/SEG 9700 G Avenue, Suite 222 Kirtland AFB NM 87117-5670	Copy 1 of X
MAJCOM/SE Organizational Address	Copy 2 of X
NAF/SE Organizational Address	Copies X of X
Mishap Unit/SE Organizational Address	Copy X of X

Subject formal report was produced in X copies and distributed as shown above. This mishap report is for mishap prevention purposes only. Providing copies or extracts outside the Air Force is prohibited. Questions concerning distribution and dissemination of information herein should be addressed to the Commander, Air Force Safety Center.

Signed
President, Safety Investigation Board

★**Table 5.1. Routing Aircraft Formal Reports (see note 4).**

	A	B	C
	Forward	**To (see note 6)**	**For (see note 3)**
1	Original Report and 2 copies by priority mail	HQ AFSC/SEF	Review, appropriate corrective action, and file
2	One copy of formal report by priority mail	HQ USAF/SEI	Review, appropriate action.
3	One copy of formal report	Organization to which pilot is attached for flying	Review, appropriate corrective action. (MAJCOMs specify indorsement requirements and suspense dates and . may grant extensions when warranted.) All recipients except MAJCOM must destroy reports in place upon receipt of MOFE. MAJCOMs destroy their copies upon closeout of all recommendations.
4		Organization that possessed aircraft if other than MAJCOM in line 9	
5		Organization to which pilot is assigned for duty if other than MAJCOM in line 9	
6		Ferrying unit with operational control over pilot if the pilot is borrowed from other than MAJCOM in line 9	
7		Unit where rated officer is assigned for duty if not on flying status	
8		Intermediate commands of units specified in lines 3 through 7	
9		MAJCOMs concerned (see note 7)	Review, appropriate corrective action, and file.
10		ANGRC/SE or HQ AFRES/SE if ANG or AFRES aircraft or crews are involved	
11		Aircraft lead MAJCOM.	
12		Gaining MAJCOM if ANG or AFRES is the convening authority	
13		ASC/SEF Wright Patterson AFB OH 45433	Review and take appropriate corrective action. Forward action memorandum or endorsement with a copy of TDR, photos, test results, and when established, MIP interim or closing action to HQ AFSC/SEF with a copy to AFMC/SE within 90 days of mishap.
14		Air Logistics/Product Center item manager as specified in TO 00-25-115 if engine is involved (see note 5)	Review and take appropriate corrective action. Forward action memorandum or endorsement with a copy of TDR, photos, test results, and when established, MIP interim or closing action to HQ AFSC/SEF with a copy to AFMC/SE within 90 days of mishap.

Table 5.1. Continued.

	A	B	C
	Forward	**To (see note 6)**	**For (see note 3)**
15	One copy of formal report	System Program Director, Air Logistics/Product Center as specified in TO 00-25-115 for aircraft, missiles, and explosives involved (see note 5)	Review and take appropriate corrective action. Forward action memorandum or endorsement with a copy of TDR, photos, test results, and when established, MIP interim or closing action to HQ AFSC/SEF with a copy to AFMC/SE within 90 days of mishap.
16		Each agency or organization tasked in the recommendations (see note 6)	Review, appropriate corrective action, and destroy upon closeout of these actions. Refer to paragraphs 5.12.3 and 6.3.2 for additional guidance.
17		HQ AFMC/SE Wright Patterson AFB OH 45433	Review and take appropriate corrective action. Indorsement concurrence will be in DB-10.
18		AFFSA/XV Andrews AFB MD 20331, MAJCOM/DOF and, if different, MAJCOM/DOF responsible for operating and maintaining applicable air traffic control, air communication, or NAVAID if deficiencies in air traffic control, air communications, or NAVAIDS involved	Review and appropriate corrective action. Indorse through command channels to responsible MAJCOM/DOF. DOF takes corrective action or withdraws report (s).
19		HQ ACC/SE Langley AFB VA 23665-2786 if deficiencies in rescue helicopter response noted in investigation	Review, appropriate corrective action, and destroy upon closeout of all corrective actions.
20		AWS/SE Scott AFB IL 62225 if deficiencies in weather services involved	
21		HQ AFOTEC/SE Kirtland AFB NM 87117 if OT&E involved or upon written request	Review and appropriate corrective action.
22	One copy of formal report	Defense Logistics Agency (DLA)/AQOI, Fort Belvoir VA if USAF contractor under DLA contract management involved (see note 6)	Review and appropriate corrective action.
23		AFFSA/XO Andrew AFB MD 20331 if instrument flight involved	
24		HSC/YAD Kelly AFB TX 78241 if life support equipment involved	Review, appropriate corrective action, and destroy upon completion of corrective actions.

25	One copy of TAB Y	HQ AFMOA/SGPA Bolling AFB DC 20332-6188 if fatal or disabling injury or illness occurred	Review, appropriate corrective action, and destroy upon completion of corrective actions.

Table 5.1. Continued.

	A	B	C
	Forward	**To (see note 6)**	**For (see note 3)**
26		MAJCOM, ANG (if possessing same/similar aircraft), and AFRES (if possessing same/similar aircraft), if fatal or disabling injury or illness occurred (see note 2)	
27		412 TW/TSSH Edwards AFB CA 93523-5000 for each person involved in emergency exit or bailout	
28		Armed Forces Institute of Pathology Washington DC 20305 Attn: Air Force Medical Examiner if fatality occurred	

NOTES:

1. ALC or PCTR action correspondence is not required unless the safety report contains findings or recommendations involving materiel failure or malfunction, depot-level maintenance, design deficiencies, or technical order deficiencies.
2. Do not send extra forms to HQ USAF, MAJCOMs, ANG or AFRES if they are included in formal reports.
3. For all mishaps requiring an action by an AFMC organization, send one copy to HQ AFMC/SE, Wright Patterson AFB OH 45433-5006, as well as the tasked agency.
4. Address elements for reference only. See AFDIR 37-135, *Air Force Address Directory*, for mail addresses and AFDIR 33-131 for message addresses.
★5. When routing formal reports to Air Logistics Centers, send the reports to the Materiel Safety Offices at the applicable ALC for internal distribution and tracking. Use the following addresses:
   a. OC-ALC/LARM Tinker AFB OK 73145
   b. OO-ALC/LF-S Hill AFB UT 84056
   c. SA-ALC/LARW Kelly AFB TX 78241
   d. SM-ALC/LAFS McClellan AFB CA 95652
   e. WR-ALC/SEM Robins AFB GA 31098-1864

NOTE: SPM and ALC support may not be collocated. Check Table 4.3 for applicability.

6. Do not send a report to an agency outside the USAF. Prepare those copies of the report and send them to HQ AFSC/SEF for forwarding. Paragraphs 5.12.3 and 6.3.2 apply.
7. This includes owning MAJCOM and all MAJCOMs operating the same MDS.

★**Table 5.2. Routing of Missile Formal Safety Reports (see note 4).**

	A	B	C
	Forward	To (see note 6)	For
1	Original report by priority mail within 30 calendar days	HQ AFSC/SEW	Review, appropriate corrective action, and file
2	One copy of formal report by priority mail	HQ USAF/SEI	Review, appropriate action.
3	One copy of formal report	Organization to which person who had mishap is assigned (see note 5)	Review, appropriate corrective action, and return to MAJCOM safety office or convening authority for disposition within 90 days of mishap. MAJCOMs specify indorsement requirements and their suspense dates. They may grant extensions when warranted.
4		Organization that possessed missile if different from organization in line 2	
5		Intermediate commands of units specified in lines 2 and 3	
6		MAJCOM concerned	Review, appropriate corrective action, and file. Forward proposed and completed actions to HQ AFSC/SEW within 90 days of mishap. Provide copies of indorsement to each formal report addressee.
7		ANGRC/SE or HQ AFRES/SE if ANG or AFRES asset involved	
8		Gaining MAJCOM if ANG or AFRES asset involved	
9		Appropriate State Headquarters and the Adjutant General (TAG) if ANG aircraft involved	
10		ASC/SE Wright Patterson AFB OH 45433 if AGM-69, AGM-86, AGM-129, PQM-102, or QF-106 involved. OC-ALC/LAH Tinker AFB OK 73145 if AGM-65 involved.	Review, appropriate corrective action, and file. Forward proposed and completed actions to HQ AFSC/SEW within 90 days of mishap. Provide copies of indorsement to each formal report addressee and HQ AFMC/SE.
11		AFDTC/SES Eglin AFB FL 32544 if AGM-45, AGM-78, AGM-88, AIM-4, AIM-7, AIM-9, AIM-120, HAHST, PQM-102, or QF-106 involved	
12		Air Logistics or Product Center system program director as specified in TO 00-25-115 for aircraft, missiles and explosives involved (notes 1, 2, and 4 apply)	Review and take appropriate corrective action. Forward action memorandum or Indorsement with a copy of TDR, photos, test results, and when established, MIP interim or closing action to HQ AFSC/SEW and a copy to AFMC/SE within 90 days of the mishap. See note 1.
13		Each agency or organization tasked in the recommendations (see note 5)	Review, appropriate corrective action, and file. Refer to paragraphs 5.12.3 and 6.3.2 for additional guidance.

Table 5.2. Continued.

	A	B	C
	Forward	To (see note 6)	For
14	One copy of formal report	HQ AFMC/SE Wright Patterson AFB OH 45433	Review and take appropriate action. Indorsement concurrence will be in DB10. If AFMC disagrees with ALC/PCTR or non-concurs, Indorsement will be provided to each formal report addressee and HQ AFSC/SEW.
15		AFFSA/XV Andrews AFB MD 20331, MAJCOM/DOF and, if different, MAJCOM/DOF responsible for operating and maintaining applicable air traffic control, air communication, or NAVAID if deficiencies in air traffic control, air communications, or NAVAIDS involved	Review and appropriate corrective action. Indorse through command channels to responsible MAJCOM/DOF. DOF takes corrective action, withdraws reports, indorses transmittal correspondence to HQ AFSC/SEW within 90 days of mishap, and provide copies of indorsement to each formal report addressee.
16		[Reserved]	Review, appropriate corrective action, and file. Indorse transmittal correspondence to HQ AFSC/SEW within 90 days of mishap, and provide copies of indorsement to each formal report addressee.
17		AWS/SE Scott AFB IL 62225 if deficiencies in weather services involved	
18		HQ AFOTEC/SE Kirtland AFB NM 87117 if OT&E involved or upon written request	
19		OO-ALC/LIW Hill AFB UT 84406 if nonnuclear ammunition and explosive materiel involved	
20		SMC/AXZ 160 Skynet St, Ste 2315 Los Angeles AFB CA 90245-4683 if system or component of space system or space launch vehicle involved or if lift system or component of ballistic missile system or ballistic missile booster involved	Review, appropriate corrective action, and file.
21	One copy of formal report	HQ AFSPC/SE Peterson AFB CO 80914 if system or component of space system or space launch vehicle involved or if lift system or component of ballistic missile system or ballistic missile booster involved	Review, appropriate corrective action, and file.

Table 5.2. Continued.

	A	B	C
	Forward	To (see note 6)	For
22		HQ STRATCOM/J443 Offutt AFB NE 68113 if system or component of ballistic missile system or ballistic missile booster involved (see note 5)	
23		ESC/SE Hanscom AFB MA 01731 if ground electronics subsystem involved	
24		HQ AFMOA/SGPA Bolling AFB DC 20332-6188 (See note 3)	
25		Armed Forces Institute of Pathology Washington DC 20305 If fatality occurred (see note 5)	

NOTES:

1. ALC or PCTR action correspondence is not required unless the safety report contains findings or recommendations involving materiel failure or malfunction, depot-level maintenance, design deficiencies, or technical order deficiencies.
2. For all mishaps requiring an action by an AFMC organization, send one copy to HQ AFMC/SE, Wright Patterson AFB OH 45433-5006, as well as the tasked agency.
3. In mishaps with significant medical contribution or resulting in a medical condition or physical injury, send a copy of the formal report.
4. Address elements for reference only. See AFDIR 37-135 for mail addresses and AFDIR 33-131 for message addresses.
5. Do not send a report to an agency outside the USAF. Prepare those copies of the report and send them to HQ AFSC/SEW for forwarding. Paragraphs 5.12.3 and 6.3.2 apply**.**

★**Table 5.3. Routing of Explosives Formal Safety Reports (see note 3).**

	A	B	C
	Forward	To	For (see note 2)
1	Original report by priority mail within 30 calendar days	HQ AFSC/SEW	Review, appropriate corrective action, and file
2	One copy of formal report by priority mail	AF/SEI	Review, appropriate action.
3	One copy of formal report	Organization to which person who had mishap is assigned (see note 5)	Review, appropriate corrective action, and file at wing, or equivalent and their organizational level, safety office. MAJCOMs specify indorsement requirements suspense dates.
4		Organization that possessed explosives if different from organization in line 2	
5		Host installation commander if organizations in lines 2 and 3 are tenants	
6		Intermediate commands of units specified in lines 2 and 3	
7		MAJCOM concerned	Review, appropriate corrective action, and file. Indorse transmittal correspondence to HQ AFSC/SEW within 90 days of mishap. Provide copies of indorsement to each formal report addressee.
8		ANGRC/SE or HQ AFRES/SE if ANG or AFRES asset involved	
9		Appropriate State Headquarters and the Adjutant General (TAG) if ANG aircraft involved	
10		Gaining MAJCOM if ANG or AFRES asset involved	
11		HQ AFOTEC/SE Kirtland AFB NM 87117 if OT&E involved or upon written request	
12		Air Logistics or Product Center system program director as specified in TO 00-25-115 for aircraft, missiles and explosives involved (notes 1, 2, and 4 apply)	Review and take appropriate corrective action. Forward Action memorandum or indorsement with a copy of TDR, photos, test results, and when established, MIP interim or closing action to HQ AFSC/SEW and a copy to AFMC/SE within 90 days of mishap. See note 1.
13		OO-ALC/LIW Hill AFB UT 84406	
14		Each agency or organization tasked in the recommendations (see note 6)	Review, appropriate corrective action, and file. Refer to paragraph 6.3.2.
15		HQ AFMC/SE Wright Patterson AFB OH 45433 (See note 2)	Review and take appropriate corrective action. Indorsement concurrence will be in DB-10. If AFMC disagrees with ALC/PCTR or non-concurs, Indorsement will be provided to each formal report addressee and HQ AFSC/SEW

★**Table 5.3. Continued.**

	A	B	C
	Forward	To	For (see note 2)
16	One copy of formal report	HQ AFMOA/SGPA Bolling AFB DC 20332-6188 (See note 5)	Review, appropriate corrective action, and file.
17		AFDTC/SES Eglin AFB FL 32542	
18		Det 63, 615 SMSQ/CC 2008 Stump Neck Road Indian Head MD 20640 if EOD operations or activities involved	
19		DDESB/KT (See note 6)	Review and file.

NOTES:

1. ALC or PCTR action correspondence is not required unless the safety report contains findings or recommendations involving materiel failure or malfunction, depot-level maintenance, design deficiencies, or technical order deficiencies.
2. For all mishaps requiring an action by an AFMC organization, send one copy to HQ AFMC/SE, Wright Patterson AFB OH 45433-5006, as well as the tasked agency.
3. Address elements for reference only. See AFDIR 37-135 for mail addresses and AFDIR 33-131 for message addresses.
★4. When routing formal reports to Air Logistics Centers, send the reports to the Materiel Safety Offices at the applicable ALC for internal distribution and tracking. Use the following addresses:
   a. OC-ALC/LARM Tinker AFB OK 73145
   b. OO-ALC/LF-S Hill AFB UT 84056
   c. SA-ALC/LFCS Kelly AFB TX 78241
   d. SM-ALC/LAFS McClellan AFB CA 95652
   e. WR-ALC/SEM Robins AFB GA 31098-1864

NOTE: SPM and ALC support may not be collocated. Check Table 4.3 for applicability.

5. In mishaps with significant medical contribution or resulting in a medical condition or physical injury, send a copy of the formal report.
6. Do not send a report to an agency outside the USAF. Prepare those copies of the report and send them to HQ AFSC/SEW for forwarding. Paragraphs 5.12.3 and 6.3.2 apply.

★**Table 5.4. Routing of Space Formal Safety Reports (see note 3).**

	A	B	C
	Forward	To	For (see note 3)
1	Original report by priority mail within 30 calendar days	HQ AFSC/SEW	Review, appropriate corrective action, and file
2	One copy of formal report by priority mail	AF/SEI	Review, appropriate action.
3	One copy of formal report	Organization to which person who had mishap is assigned (see note 6)	Review, appropriate corrective action, and file at wing or equivalent and their organizational level safety office. MAJCOMs specify indorsement requirements suspense dates. They may grant extensions when warranted.
4		Organization that possessed or controlled mishap asset if different from organization in line 2	
5		Intermediate commands of units specified in lines 2 and 3	
6		MAJCOM concerned	Review, appropriate corrective action, and file. Indorse transmittal correspondence to HQ AFSC/SEW within 90 days of mishap. Provide copies of indorsement to each formal report addressee.
7		Responsible MAJCOM if development asset involved	
8		Gaining MAJCOM if developmental asset involved	
9		System Program Director, Air Logistics or Product Center, as specified in TO 00-25-115 for aircraft, missiles and explosives involved (notes 1 and 4 apply)	Review and take appropriate corrective action. Forward action memorandum or endorsement with a copy of TDR, photos, test results, and when established, MIP interim or closing action to HQ AFSC/SEW and a copy to HQ AFMC/SE within 90 days of the mishap. See note 1.
10		Each agency or organization tasked in the recommendations (See note 6)	Review, appropriate corrective action, and file. Refer to paragraphs 5.12.3 and 6.3.2 for additional guidance.
11		HQ AFMC/SE Wright Patterson AFB OH 45433	Review and take appropriate corrective action, indorsement concurrence will be in DB-10. If HQ AFMC disagrees with ALC/PCTR or non-concurs, Indorsement will be provided to each formal report addressee and to HQ AFSC/SEW within 90 days of mishap
12		HQ ACC/SE Langley AFB VA 23665-2786 if helo ops deficiencies involved	Review, appropriate corrective action, and file. Indorse transmittal of correspondence to HQ AFSC/SEW within 90 days of mishap, and provide copies of the indorsement to each formal report addressee
13		HQ AFOTEC/SE Kirtland AFB NM 87117	

Table 5.4. Continued.

	A	B	C
	Forward	To	For (see note 3)
14		OO-ALC/LIWS Hill AFB UT 84406 if ammunition and explosives materiel other than nuclear involved (see note 4)	.
15		SMC/AXZ 160 Skynet St, Ste 2315 Los Angeles AFB CA 90245-4683	Review, appropriate corrective action, and file.
16		HQ AFSPC/SE Peterson AFB CO 80914	
17		ESC/SE Hanscom AFB MA 01731 if ground electronics subsystem involved	
18		NASA Headquarters/QS Washington DC 20546 (See note 6)	
19		HQ AFMOA/SGPA Bolling AFB DC 20332-6188 (See note 5)	
20		Armed Forces Institute of Pathology Washington DC 20305 If fatality occurred (see note 6)	

NOTES:

1. ALC or PCTR action correspondence is not required unless the safety report contains findings or recommendations involving materiel failure or malfunction, depot-level maintenance, design deficiencies, or technical order deficiencies.
2. For all mishaps requiring an action by an AFMC organization, send one copy to HQ AFMC/SE, Wright Patterson AFB OH 45433-5006, as well as the tasked agency.
3. Address elements for reference only. See AFDIR 37-135 for mail addresses and AFDIR 33-131 for message addresses.
★4. When routing formal reports to Air Logistics Centers, send the reports to the Materiel Safety Offices at the applicable ALC for internal distribution and tracking. Use the following addresses:
   a. OC-ALC/LARM Tinker AFB OK 73145
   b. OO-ALC/LF-S Hill AFB UT 84056
   c. SA-ALC/LACS Kelly AFB TX 78241
   d. SM-ALC/LAFS McClellan AFB CA 95652
   e. WR-ALC/SEM Robins AFB GA 31098-1864

NOTE: SPM and ALC support may not be collocated. Check Table 4.3 for applicability.

5. In mishaps with significant medical contribution or resulting in a medical condition or physical injury, send a copy of the formal report.
6. Do not send a report to an agency outside the USAF. Prepare those copies of the report and send them to HQ AFSC/SEW for forwarding. Paragraphs 5.12.3 and 6.3.2 apply.

★**Table 5.5. Routing of Class A and B Ground General Use On-Duty Formal Safety Reports (see note 3).**

	A	B	C
	Forward	To	For
1	Original report by priority mail within 30 calendar days	HQ AFSC/SEG	Review, appropriate action, and file
2	One copy of formal report by priority mail	HQ USAF/SEI	Review, appropriate action.
3	One copy of formal report	Organization of person who had the mishap (see note 6)	Review, appropriate corrective action, and file.
4		Organization that sustained the loss if different from organization in line 2	MAJCOMs specify indorsement requirements and their suspense dates.
5		Host base safety office	
6		Intermediate commands of units specified in lines 2 and 3	
7		MAJCOM concerned	Review, appropriate corrective action, and file. Indorse transmittal correspondence to HQ AFSC/SEG within 90 days of mishap. Provide copies of indorsement to each formal report addressee.
8		ANGRC/SE or HQ AFRES/SE if ANG or AFRES asset involved	
9		Gaining MAJCOM if ANG or AFRES asset involved	
10		Appropriate State Headquarters and the Adjutant General (TAG) if ANG aircraft involved	
11		Air Logistics or Product Center system program director and item manager as specified in TO 00-25-115 if failure or malfunction of materiel, suspected design deficiency, DR, TDR, or TO change involved (see note 4)	Review and take appropriate corrective action. Forward action memorandum or indorsement with a copy of TDR, photos, test results, and when established, MIP interim or closing action to HQ AFSC/SEG and a copy to HQ AFMC/SE within 90 days of the mishap. See note 1.
12		Each agency or organization tasked in the recommendations (see note 6)	Review, appropriate corrective action, and file. Refer to paragraphs 5.12.3 and 6.3.2 for additional guidance.
13		HQ AFMC/SE Wright Patterson AFB OH 45433 (See note 2)	Review and take appropriate corrective action. Indorsement concurrence will be in DB-10. If HQ AFMC disagrees with ALC/PCTR or non-concurs, indorsement will be provided to each formal report addressee and HQ AFSC/SEG within 90 days of mishap.
14	One copy of formal report	HQ AFOTEC/SE Kirtland AFB NM 87117 if OT&E involved or upon written request	Review, appropriate corrective action, and file. Indorse transmittal correspondence to HQ AFSC/SEG within 90 days of

15		HQ AFCESA/DF Tyndall AFB FL 32403 if fire suppression or crash/rescue involved	mishap, and provide copies of indorsement to each formal report addressee.

Table 5.5. Continued.

	A	B	C
	Forward	To	For
16		HQ AFMC/SE Wright Patterson AFB OH 45433 if systems, vehicles, or equipment under management of AFMC involved	Review and take appropriate corrective action. Indorsement will be provided to each formal report addressee and HQ AFSC/SEG.
17		ASC/SE Wright Patterson AFB OH 45433	Review for "lessons learned" to be included in design processes and file.
18	One copy of AF Form 711GA	HQ AFMOA/SGPA Bolling AFB DC 20332-6188 (See note 5)	

NOTES:
1. ALC or PCTR action correspondence is not required unless the safety report contains findings or recommendations involving materiel failure or malfunction, depot-level maintenance, design deficiencies, or technical order deficiencies.
2. For all mishaps requiring an action by an AFMC organization, send one copy to HQ AFMC/SE, Wright Patterson AFB OH 45433-5006, as well as the tasked agency.
3. Address elements for reference only. See AFDIR 37-135 for mail addresses and AFDIR 33-131 for message addresses.
★4. When routing formal reports to Air Logistics Centers, send the reports to the Materiel Safety Offices at the applicable ALC for internal distribution and tracking. Use the following addresses:
   a. OC-ALC/LARM Tinker AFB OK 73145
   b. OO-ALC/LF-S Hill AFB UT 84056
   c. SA-ALC/LACS Kelly AFB TX 78241
   d. SM-ALC/LAFS McClellan AFB CA 95652
   e. WR-ALC/SEM Robins AFB GA 31098-1864

NOTE: SPD and ALC support may not be collocated. Check Table 4.3 for applicability.
5. In mishaps with significant medical contribution or resulting in a medical condition or physical injury, send one copy of the formal report with an AF Form 711GA.
6. Do not send a report to an agency outside the USAF. Prepare those copies of the report and send them to HQ AFSC/SEG for forwarding. Paragraphs 5.12.3 and 6.3.2 apply.

Chapter 6

FOLLOW-UP ACTIONS

6.1. General Information. After the safety report has been submitted, follow-up action is required to help prevent possible mishap recurrence.

★6.1.1. Follow-up action starts with evaluating the formal report or final message. Ensure the investigators' conclusions are correct and well supported. Then determine the adequacy of the reported preventive actions. There may be additional recommendations the reporting organization cannot implement independently. Reviewing authorities validate these recommendations, decide whether they are feasible, and act on the ones for which they are responsible. These post-report activities are the most important reasons for the management information system in this instruction. For mishaps and incidents without formal reports, see paragraph 6.11. The remainder of this chapter explains the procedures and responsibilities for completing action on safety reports.

★6.1.2. For Class A mishaps, upon completion of the SIB's briefing, the MAJCOM Commander has seven (7) working days to provide comments and attach these comments as an addendum to the SIB's final message report. The MAJCOM

Commander options for the SIB's final message report are: 1) Concur with report as written, 2) Concur with comments, 3) Direct SIB to complete further investigation

★6.1.3. For aircraft mishaps, once the MAJCOM validates the SIB report and this report has been received by HQ AFSC, follow-up actions begins. HQ AFSC will send a message using the same message AIG as the SIB's final message report requesting comments and indorsements on the formal safety mishap report with a 30-day suspense. Wing level comments will be requested at this time . Commands or agencies with responsibility for corrective action will also use the same SIB AIG to inform all of their comments and indorsements. Negative replies are only required from commands and agencies with required actions and the mishap wing. All other addressees are not required to respond to the HQ AFSC message, however, if they chose to respond their comments must also be transmitted using the SIB's AIG. All comments and indorsements will be used in developing the Memorandum of Final Evaluation (MOFE). If no corrective action is to be taken, then a summary of the rationale by the reviewing authority will be provided to HQ AFSC. This procedure will stimulate discussion on the causes and recommendations and keep all agencies involved as the MOFE progresses.

6.1.4. For all other mishap categories, HQ AFSC will work closely with the accountable command/convening authority to solicit comments and the command indorsement.

6.1.5. If during the review process the convening authority or higher authority learns facts that were not available to safety investigators or that shed new light on the published findings, causes, and recommendations, he or she may do one of the following:

- Reopen the safety investigation.
- Include the new facts in the command indorsement, if prepared.
- Amend the final safety message with a status report if there is no formal report.

6.2. Who Reviews the Formal Report. Mishap causes may require corrective actions by organizations both within and external to the chain of command. Therefore, the following organizations review the formal report:

- The investigating MAJCOM and subordinate elements specified by the investigating MAJCOM commander.
- Agencies with technical or logistic support responsibility.
- Air Force agencies outside the investigating command if their functions were involved in the mishap, e.g., AFFSA/XV for air traffic services).
- Each MAJCOM tasked for action in the mishap recommendations. For purposes of this chapter, the term "MAJCOM" includes FOA and DRU commanders, SPDs or equivalent, program executive offices (AFPEO), etc. The term also includes air component commanders of unified commands during contingency operations.

★6.2.1. MAJCOMs, when appropriate for mishap prevention purposes, may brief mishaps to applicable unified command commanders and allow review and comment by appropriate unified command staff offices if they agree to safeguard the information according to rules contained in this instruction. Consult HQ AFSC if the unified command requests file copies of the message or formal report.

★6.3. Review Process. Commanders at each level must take preventive actions within their areas of responsibility. If an investigation is inadequate or poorly documented, the convening authority may return the report for additional work.

6.3.1. **Findings and Causes.** Evaluate each finding. If the reviewing authority does not concur with any finding or cause, explain why. If an alternative or additional finding or cause is proposed, provide the new finding along with rationale for proposed change (see figure 6.1).

★6.3.2. **Recommendations.** The convening authority evaluates each recommendation, regardless of the designated action agency. These evaluations include validating the recommendations and verifying the correct action agencies are designated. If the recommendation requires an aircraft, system, or missile modification, comply with DoDI 5000.2, AF SUP 1.

6.4. Action Agencies. When formal report recommendations require action by agencies external to the convening MAJCOM, these agencies must review and comment on the report within the required 30 day limit established by HQ AFSC's message.

6.4.1. The distribution tables for formal reports call for routine distribution to the agencies most often identified as action agencies. If a report lists an Air Force action agency not in the distribution tables, prepare and send an extra copy of the report. If a non-Air Force organization is an action agency, send a copy of the report to HQ AFSC/JA for forwarding to the additional responsible agency.

6.4.2. Action agency comments should provide the information needed to monitor corrective actions, such as the Materiel Improvement Project (MIP) number, Data Base 10 accession number, reference to Configuration Control Board (CCB) minutes, or Engineering Change Proposal (ECP) number.

6.4.3. Recommendations may concern proposed aircraft modifications. When commenting on such recommendations, AFPEOs or AFMC action agencies (SPDs) state whether or not the proposed modifications require a new development effort significantly beyond the scope of current direction and available funds. In such cases, specify the documents required of the operational commands according to AFI 10-601, *Mission Needs and Operational Requirements Guidance and Procedures*.

★**6.5. Change in Mishap Class.** Changes in damage costs or degree of injury/illness that result in a change in the mishap class requires additional reporting. Thus, the investigating command will track mishaps that have damages estimates close to a threshold limit and injuries/illness that have the potential for improving or worsening. This is especially significant for injuries/illness that could result in the injured person being medically discharged or separated, resulting in an upgrade to a Class A mishap. If the mishap classification changes after the final report was submitted, a status report will be sent to change the mishap class. The MAJCOM will track those mishaps until issuance of the memorandum of final evaluation.

★**6.6. Final Message Review:** All agencies or organizations on the SIB final message report have 30 days from the HQ AFSC message to provide comments and indorsements. If no comment or indorsement is received within 30 days of this message, HQ AFSC will begin the mishap's MOFE.

★**6.7. Unsolicited Comments.** Agencies and organizations reviewing the final message report may desire to comment on the investigation, findings, causes, recommendations or preventive actions even though they are not in the chain of command nor a designated action agency. Send these to appropriate HQ AFSC division and to all SIB final message report addressees.

6.8. Final Evaluation. HQ AFSC prepares a Memorandum of Final Evaluation (MOFE) on each formal safety report, or final message report when the formal report is waived, except for Class C mishaps or Class A or B mishaps involving only engine damage (see paragraph 7.4.4). Based on the wide variety of ground mishaps and the varying degree of Air Force preventive actions final evaluation on ground investigations also includes a Memorandum of Administrative Closing (MOAC) or an Administrative Closeout Memorandum (ACM). MOACs and ACMs will be used when a mishap contains limited prevention value.

★6.8.1. This evaluation will consider inputs from the convening MAJCOM, other action agencies, commander of the mishap wing, any unsolicited comments, and statements of person(s) cited in the SIB final report. Upon completing this review of each aircraft, missile, nuclear, space, ground, and explosives report, HQ AFSC prepares a final MOFE. This evaluation is an assessment of the SIB formal report, the reviews, and comments provided by the convening MAJCOMs and all other inputs. When HQ USAF/SE transmits the MOFE, via SarahLite message, it becomes the official Air Force position on findings, causes, and recommendation. If a MOAC or ACM is completed, it may be prepared as a SarahLite message or memorandum format.

6.8.2. The recommendations validated by HQ USAF/SE become directed actions. They are assigned to action agencies and given suspense dates. The suspense date is the date action agencies must report on completed actions or on progress toward completed actions. HQ AFSC will send the MOFE to all addressees on the SIB final message report.

6.8.3. Once recommendations are validated and assigned in the MOFE, they become a part of the system of recordkeeping mandated by public law and required of each service by DoDI 6055.7. Agencies and organizations may decline to take action on SIB or HQ USAF/SE recommendations; however, they remain a permanent part of the HQ AFSC data base and must be subjected to periodic review. All agencies and organizations take action on recommendations in accordance with paragraph 6.9. However, in cases where no action is taken, they are required to reevaluate those recommendations during each semiannual reporting period and reaffirm their intent to defer action. A one-line reference to each deferred recommendation in the semiannual report's memorandum of transmittal (paragraph 6.10.3) is sufficient.

6.8.4. **The Air Force Surgeon General's consultant in Occupational Medicine** (AL/OEMI), provides final evaluation of all formal reports concerning occupational illness.

6.9. Reviewing Commander Action Following Receipt of MOFE:

★6.9.1. The convening MAJCOM commander ensures action is taken on all open recommendations on which the command is the action agency. When the MOFE directs recommendations, the action agency will give any identifying data to HQ AFSC to monitor progress of actions. For AFMC/ALC actions, current status of open recommendations is reported in the material safety data base (DB-10). If a MAJCOM disagrees with the status or action shown in DB-10, advise the ALC or PCTR and HQ AFSC/SEF.

6.9.2. All agencies and organizations review each MOFE, analyzing causes to determine whether any of the deficiencies leading to the mishap apply to their commands. Prompt corrective action can help to convert valuable lessons learned into mishap prevention.
6.9.3. HQ AFMC ensures all SPDs, or their equivalents, receive MOFEs appropriate to similar systems. These directors review the MOFEs for applicability to their systems and initiate publications or hardware changes as required. The goal is to maximize mishap prevention by transferring useful information from one weapon system to another.

★**6.10. Managing Preventive Action After the MOFE.** After receipt of the SIB final message report all concerned agencies and organizations have a continuing responsibility for managing the preventive action process. HQ AFRES, ANGRC, and MAJCOMs will establish a Mishap Review Panel (MRP) or equivalent process to ensure mishap recommendations are methodically addressed. As a minimum, the MRP or similar process should meet once every six months. The semiannual status report of preventive actions is a way of ensuring these responsibilities are completed. It also advises all parties of the status of open recommendations.
★6.10.1. HQ AFSC tracks each open recommendation until final action is completed. If a similar recommendation for that weapon system is already open and being tracked, HQ AFSC administratively closes the latest recommendation (referencing the original open recommendation), and updates the status of the original recommendation. The following examples are acceptable closing actions:

- Recommended changes to all applicable publications were issued.
- Recommended modifications to all applicable systems or items were completed.
- Recommended studies or evaluations were completed, conclusions were validated, and actions on all validated requirements were completed. ANGRC, HQ AFRES, and MAJCOMs are responsible for identifying P(S) safety modification requirements and tracking them through completion.
- Recommended actions were determined not feasible due to cost, operational constraints, or programmed removal of the system or item from service. HQ AFMC, the using lead command, and the Air Staff program element monitor (PEM) must concur with this determination and accept the resultant risks. Signature closure documentation of these items will be included in AFMC's DB-10 and AFSC databases.

6.10.2. Prior to 1 March and 1 September of each year, HQ AFSC sends a report to each agency and organization responsible for a recommendation. The listings reflect the action agencies shown in the MOFEs, unless there were later changes in action agencies. Due to their small numbers, nuclear safety accident and incident recommendations are handled on an ad hoc basis.
★6.10.3. ANGRC, HQ AFRES, MAJCOMs and agencies (except HQ AFMC) shown as action agencies send semiannual reviews to the appropriate HQ AFSC division (SEF, SEG, SEW). These reviews show the status of each open recommendation, including recommendations open at the time of the MOFE or the latest semiannual review, whichever was most recent. The reviews cover those mishaps which are still open from previous semiannual reviews. Suspense to HQ AFSC is 15 April and 15 October.
6.10.3.1. How to Report Semiannual Reviews. Attach a single memorandum of transmittal. Report one mishap per page (ground mishaps, if the reports are short, may be combined on one page). Each reply must contain the mishap event number. ANGRC, HQ AFRES, and MAJCOMs that conduct mishap review panels (MRPs) and publish formal minutes can use this format to satisfy the semiannual review. Include the following for each mishap:

- Identification of Weapon (or Support) System. For aircraft and missiles, list the MDS. For explosives, give the normal description of the item (such as "Ammo, 20mm, HEI, M56A3"), not the national stock number.
- Mishap Event Number (paragraph 4.8.2).
- Status of each open recommendation. Since the original SIB recommendations can be changed, the original numbers may not be valid for tracking. Identify each by the recommendation number assigned by HQ AFSC in the MOFE. Show the status of action in a separate paragraph immediately below each numbered recommendation, such as "Status: Open."
- Action taken or planned for each recommendation. Include important points concerning nonconcurrence by other agencies, delays, or other significant problems.
- If action is transferred to other commands or agencies, coordinate the transfer in advance and mutually agree on the action. The last status update from the losing MAJCOM states the transfer effective date and includes the gaining command or agency point of contact or OPR.

6.10.4. HQ AFMC reports the status of open recommendations in the DB-10 data base of the Information Central (INFOCEN) system. If a MAJCOM disagrees with the status or action shown in DB-10, advise the PCTR or ALC, HQ AFMC/SE, and HQ AFSC.

6.11. Managing Preventive Action for Mishaps Without Formal Safety Reports. When message reports are used in lieu of formal reports, an indorsement is still required unless the MAJCOM concurs with the investigation. While Class C mishaps and HAP events are not catastrophic, they are serious enough to require reporting on an individual basis, and recommendations resulting from them require effective management.

6.11.1. **Reporting Organization Responsibilities:**

6.11.1.1. Local Actions. Briefly describe local actions in the final message report. Each local action described should be directly related to a causal finding of the investigators. For Class C ground and ground (aircraft involvement) mishaps, describe local corrective actions in the CMR. In both types of reports, explain the planned local actions not yet completed, and include an estimated completion date.

6.11.1.2. Actions by Supporting Agencies or Higher Authorities. When preventive actions need the assistance of higher headquarters or a supporting agency, two avenues are usually available:

6.11.1.2.1. Use the DR system and the technical order deficiency reporting system to report deficiencies discovered. The appropriate action is to send a DR, AFTO Form 22, or AF Form 847. When these actions are taken, describe them in the safety message report. Include DR information in the CMR for Class C ground and ground (aircraft involvement) mishaps.

6.11.1.2.2. If existing reporting systems do not adequately communicate recommendations to action agencies, list recommendations in the message report. Base recommendations on the findings of the investigators, and identify action agencies. The distribution of the CMR is limited. Therefore, use the following methods for Class C ground and ground (aircraft involvement) mishaps:

- If an action agency is on distribution for the CMR, place the recommendations in the report, and identify the action agencies.
- If an action agency is not on distribution for the CMR, use separate correspondence to request the action. If the action agency is outside the Air Force, send this correspondence to the appropriate HQ AFSC division (SEF, SEG, etc.) for forwarding. Reference the separate correspondence in the report by subject and date and identify action agencies. Do not attach copies of such correspondence to the CMR.

★6.11.2. **Reviewing Authority Responsibilities.** Reviewing authorities for Class C, HATR, and HAP safety reports include HQ AFSC, higher levels in the chain of command (i.e., Numbered Air Force and MAJCOM), and action agencies outside the command. For each report the reviewing authority is tasked to assess the final safety message or report and determine the adequacy of the overall safety report or message, investigation, findings, causes, and recommendations. If any reviewing authority deems an incomplete investigation or report was accomplished then send a message to the reporting organization's MAJCOM expressing concern and providing any suggested corrective actions. The reporting organization's MAJCOM has 90 days to respond back to the reviewing authority concerns and comments with an information copy to HQ AFSC.

6.11.2.1. MAJCOMs, ALCs, and SPDs evaluate recommendations for which they are responsible. If the recommendations are appropriate and feasible, take the recommended action. Feedback to the reporting organization is necessary to promote confidence in the reporting system. Send documentation of the feedback to the appropriate HQ AFSC division for filing with the safety report.

6.11.2.2. MAJCOMs monitor the actions taken by other agencies on Class C, HATR, and HAP safety recommendations. This is particularly important for MAJCOMs on DRs, AFTO Forms 22, and AF Forms 847. It includes advising the action agency of any disagreement with the recommended action. Document these actions and send a copy to the appropriate HQ AFSC division with the safety report.

6.11.2.3. Action agencies outside the command tell the reporting organization's safety office what actions they are taking in response to Class C, HATR, and HAP safety recommendations. These agencies evaluate the recommendations for appropriateness and feasibility, and document their decisions in their responses to HQ AFSC and the reporting organization.

6.11.2.4. The action ALC or other agency with engineering responsibility send to the appropriate HQ AFSC division a copy of each TDR. Include all supporting documents such as metallurgical analyses, photographs, test reports, and similar materials.

6.11.2.5. MAJCOMs receiving safety reports from other agencies on shared materiel (aircraft, engines, equipment, weapons, vehicles, explosives, etc.) review findings, causes, and recommendations for adequacy and applicability to their subordinate units. They monitor follow-up preventive actions until completed. When necessary, communicate with the mishap agency and other common users (through HQ AFSC/JA for non-Air Force users) to ensure recommendations and preventive actions are sufficient for all users.

★Figure 6.1. Sample Command [NON-CONCUR/CONCUR IN PART] Indorsement.

Use this format when responding to HQ AFSC's request for comments and indorsement. Use SARAH LITE message format.

FROM: HQ AFMC WRIGHT-PATTERSON AFB OH//SE//

TO: HQ AFSC KIRTLAND AFB NM//SEF//

INFO: ALL REMAINING SIB ORIGINAL MESSAGE ADDRESSEES

SUBJ//HQ (MAJCOM) Indorsement of Class A Flight (Explosive) Mishap, 96/04/01, ZYWX, 001B, Kirtland AFB NM.

1. Mishap Summary. (Brief narrative)

2. Command Evaluation.

a. SIB's (Investigator's) Findings and Causes: (If nonconcur, or concur-in-part, then add the following)

(1) Finding 1.. (Text)

Position. (Position; "Nonconcur" or "concur-in-part". Finding is then either deleted, reworded, separated into two findings and renumbered, etc.).

Rationale. (Rationale for change).

(2) Finding 2.. Include remaining findings only if changed or deleted.

b. SIB's (Investigator's) Recommendations: (Only list recommendations that non-concur or concur in part.)

(1) Recommendation 1. (Text)

Position. (Nonconcur, or concur-in-part).

Rationale. (Rationale) (***NOTE:*** All recommendations must state the position and rationale.)

c. Revised Recommendations. (If numerous changes were made to the recommendations, this subparagraph may be needed).

d. Added Recommendations. (For additional concerns, if applicable).

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THIS CONTAINS PRIVILEGED SAFETY INFORMATION. UNAUTHORIZED USE OR DISCLOSURE CAN SUBJECT YOU TO CRIMINAL PROSECUTION, TERMINATION OF EMPLOYMENT, CIVIL LIABILITY, OR OTHER ADVERSE ACTIONS. SEE AFI 91-204, CHAPTER 1 FOR RESTRICTIONS. DESTROY IN ACCORDANCE WITH AFMAN 37-139 WHEN NO LONGER NEEDED FOR MISHAP PREVENTION PURPOSES.

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PART 2

SPECIFIC SAFETY DISCIPLINE REPORTING

Chapter 7

AIRCRAFT MISHAP REPORTING

★7.1. General Information. Categorize aircraft mishaps as flight, flight-related, flight-unmanned vehicle, or aircraft involvement mishaps based on the circumstances when the mishap occurs. "Flight", "Flight Related", "Flight-Unmanned Vehicle" mishaps include all aircraft mishaps occurring when "intent for flight" exists (see Glossary). Classify aircraft mishaps as explained in paragraph 2.3, according to the severity of the resulting injury, occupational illness, damage, or mishap potential. This chapter provides instructions for reporting flight, flight related and flight-unmanned vehicle mishaps.

7.2. Aircraft Mishap Rates and Accountability. All Air Force flight, flight-unmanned vehicle (RPV and UAV) mishaps, are Air Force rate producing. However certain mishaps may be deemed non-rate producing by the HQ USAF/SE examples of these are R&D flight mishaps where the contractor has assumed risk of loss as specified in contracts, certain "special access" flight mishaps as determined by HQ USAF/XO, HQ USAF/TE, and HQ USAF/SE, flight related mishaps, and unpowered glider/sail plane flight mishaps. HQ AFSC assigns a flight mishap to the organization credited with the aircraft's flying hours at the time of the event. The following instructions amplify this basic rule for specific circumstances:
7.2.1. HQ AFSC assigns a mishap involving an aircraft for which no flying time is credited to the command possessing the aircraft. HQ AFSC includes such mishaps in overall Air Force mishap numbers, but they are not rate producing for the accountable command.
7.2.2. HQ AFSC assigns a mishap involving property damage resulting from propeller wash, rotor wash, or jet blast from Air Force aircraft to the owning command of the aircraft producing the damage. Base mishap category upon intent for flight.
7.2.3. HQ AFSC assigns accountability for mishaps occurring while aircraft are being transferred between organizations. Aircraft being ferried by the:
7.2.3.1. Gaining organization, transfer occurs when intent for flight has been established.
7.2.3.2. Losing organization, transfer occurs when the aircraft is accepted by the gaining organization or an aircrew of the gaining organization.
7.2.3.3. The Air Combat Command (ACC) Air Operations Squadron (AOS) for delivery to an Air Force organization, transfer occurs when the aircraft is accepted by the gaining organization.
7.2.3.4. The ACC AOS for foreign military sales aircraft, transfer from the losing organization occurs when intent for flight begins. Continue safety reporting until delivery to the foreign nation or to the embarkation point for delivery as cargo. Mishaps occurring after transfer to any non-Air Force organization are not assigned by HQ AFSC to any Air Force organization. In these cases, include the term "Non-Air Force Aircraft" in the subject line of the safety message.
7.2.4. For midair collision mishaps between Air Force aircraft of two different commands, HQ AFSC will determine accountability and assign the mishap to only one command based on the causal aircrafts owning command.
7.2.5. HQ AFSC assigns a mishap involving aircraft leased to manufacturers for demonstration purposes (code XY) to the Air Force at large if the lessee does not assume the risk of loss. HQ AFSC does not assign mishaps involving these aircraft to any command while the aircraft are in the possession of the contractor. The leasing command is responsible for safety investigating and reporting.
7.2.6. Investigation and reporting of mishaps involving miscellaneous air operations (non-Air Force aircraft with intent for flight) are in Chapter 15.
7.2.7. HQ USAF/SE assigns all other Air Force aircraft mishaps involving operators or equipment from two or more MAJCOMs not covered in these rules to only one command after review of the formal report and all indorsements.

★**7.3. Classifying Aircraft Mishaps.** Mishap classification is based on injury to personnel and the costs of damage to Air Force and non-Air Force equipment and property. All responsible parties involved in a mishap should be interviewed and equipment/material examined as soon as possible. The convening authority needs an estimate of all damages to classify the mishap and convene the appropriate level of investigation. Adjust these early estimates later to reflect a more systematic evaluation conducted during the investigation. A fairly accurate classification can usually be made when first surveying the damage. See paragraph 2.4 for examples of direct and indirect costs and instructions on determining mishap costs. Refer to paragraph 8.4.9 to determine RPV costs.

7.4. Reporting Aircraft Mishaps and Incidents:
7.4.1. **Class A Mishaps.** These mishaps normally require formal reports as well as message reports. Large-scale SIB investigations almost always call for formal reports. In some cases, HQ AFSC may decide a formal report is not needed. See paragraph 5.3 for waiver request instructions.
7.4.2. **Class B Mishaps.** Class B mishaps require formal reports as well as message reports, if the investigation is complex. HQ AFSC may determine a formal report is not needed. See paragraph 5.3 for waiver request instructions.
★7.4.3. **Class A or B Full-Scale RPV Mishaps.** If the RPV is unmanned, consider it a flight-unmanned vehicle mishap. If the RPV is manned, consider it a flight mishap. In all cases of RPV mishaps, a rate will be produced as outlined in AFI 91-202.
7.4.4. **Class A or B Mishaps Involving Only Engine Damage.** Class A or B mishaps which are so classified because of engine FOD, including bird ingestion, do not require formal reports. HQ AFSC does not prepare an MOFE on these mishaps. See Chapter 14 for specifics on reporting FOD mishaps.
★7.4.5. **Flight-Unmanned Vehicle Mishaps.** This category include all UAVs and unmanned full-scale RPVs. This category of mishaps are rate-producing per AFI 91-202. Cost computation requirements will follow paragraph 2.4.6.

★7.4.6. **Reporting Unmanned Full Scale RPV Mishaps.** Report unmanned full scale RPV mishaps according to Class C reporting procedures, regardless of class, when there is no injury or collateral damage (table 4.1). Normally, formal reports, memorandums of indorsement, and MOFEs are not required for these mishaps when there is no collateral damage or injury. However, the investigating command or HQ AFSC may request them on a case-by-case basis. The investigating MAJCOM will track recommendations until all actions are complete.

7.4.7 **Flight-Related Mishaps.** Although mishaps are usually classified according to severity of damage, injury, or occupational illness, consider additional factors when determining Class A or B reporting requirements for these special cases. For Class C flight-related mishaps, only final message reports are required. Formal (AF Form 711-series) reports, if prepared at unit or MAJCOM option according to paragraph 7.4.6, will be in the two-part format.

7.4.7.1. Reporting Airdrop Operations Mishaps:

7.4.7.1.1. Parachuting Injuries. Report parachuting injuries to Air Force personnel performing official duties as flight-related mishaps. Other military services report injuries to their personnel during parachute jumps from Air Force aircraft, unless the injured persons are permanently assigned to an Air Force unit (paragraph 2.1.20). The Air Force takes part in these investigations when requested by the other service. This normally occurs if the mishap involves Air Force equipment or techniques. When injuries to any parachutist result from in-flight collision with Air Force aircraft, the mishap is an Air Force flight-related mishap.

7.4.7.1.2. Air-dropped Equipment Damage. Report unexpected damage to air-dropped Air Force equipment as a flight-related mishap. Other services experiencing damage to air-dropped equipment report their own losses. The Air Force takes part in these investigations when requested by the other service.

7.4.7.1.3. Airdrop Operations Unexpected Damage. Injury or damage may occur to persons or property on the ground because an air-dropped load impacted off the drop zone. Only preliminary and final message reports and formal reports required by paragraph 7.4.7.2 are required.

7.4.7.2. Reporting Flight-Related Fatality and Injury Mishaps. This includes mishaps caused by objects dropped from or propelled by aircraft. Reporting will be accomplished in accordance with the format requirements in Table 4.1 and addressing requirements in Chapter 4.

7.4.7.3. Reporting Air Force Aircraft Occupant Fatality and Injury or Illness Mishaps. An occupant is any person not on the flight orders as a duty crewmember. Submit reports according to paragraph 7.4.7.2. Submit formal reports in the two-part format.

7.4.8 **Class C Aircraft Mishaps.** These are normally reported only by message. At MAJCOM or unit option, either a formal SIB or a single investigator may prepare an AF Form 711-series formal report. If so, use the two-part format. MAJCOMs may approve deletion of tabs or 711-series forms. If the MAJCOM indorses a formal unit level Class C report, or if the MAJCOM prepares a formal report, HQ AFSC will prepare a MOFE on the mishap.

★7.4.9. **Other Events Reportable as Class C Aircraft Mishaps.** Certain events are deemed important enough to trend for mishap preventions despite the fact they do not meet standard mishap reporting criteria. Do not include damage cost in these mishap reports. Report as Class C Flight mishaps when intent for flight is established. These mishaps do apply to full-scale RPVs and UAVs. Others are Class C ground (aircraft involvement) mishaps. Report the following:

7.4.9.1. In-flight fires.

7.4.9.2. Massive fuel leakage in an engine bay.

7.4.9.3. Any wire strikes by fixed or rotary wing aircraft.

7.4.9.4. Engine case penetration, rupture, or burn-through from internal engine component failure. See Chapter 14 for foreign object damage (FOD) reporting when all damage is confined to the engine.

7.4.9.5. Loss of thrust sufficient to prevent maintaining level flight at a safe altitude, or which requires the pilot to jettison stores.

7.4.9.6. Emergency or precautionary landing of a single engine aircraft, including helicopters, with imminent engine (or rotor drive system) failure confirmed after landing.

7.4.9.7. Unselected propeller or thrust reversal.

7.4.9.8. Engine flameout, failure, or emergency shutdown to minimize damage to malfunctioning engine.

7.4.9.8.1. Except for maintenance engine runs, report any single engine flameout, failure, or emergency shutdown (single and twin engine aircraft) after initiating engine start until engine shutdown in accordance with the following:

- Report F-15, F-100-PW-100 engine stalls occurring only during nonafterburner, nonmaneuvering flight.
- Report F-16 (Region 1) and F/EF-111 engine stalls not resulting from rotating hardware failure (disks, blades, bearings, etc.) in a privileged summary report message at the end of each quarter instead of individual mishap reports. F-16 engine stalls, operating outside Region 1, are not reportable. Provide the following information for each event:
  - Aircraft MDS and tail number.

- Engine type and serial number.
- Date and Location.
- Phase of flight: climb, touch-and-go, low level, etc.
- Aircraft speed (KIAS) and maneuver.
- Altitude (AGL and MSL).

- Short mishap summary including throttle position and movement.
- Mishap cause and corrective action.

7.4.9.8.2. Report dual engine flameout, failure, or emergency shutdown after initiating engine start until engine shutdown, except for maintenance engine runs, for aircraft with three or more engines.

- For B-52 aircraft consider the shutdown of both engines in the same pod as a single engine shutdown when the reason for the second engine shutdown is purely precautionary and it has no damage or mechanical malfunction.
- Do not report intentional engine shutdown for training, functional check flight (FCF), or other nonemergency purposes if engine restarts normally.

7.4.9.9 All cases of departure from intended takeoff or landing surface (runway, helipad, landing zone, etc.) onto adjacent surfaces.

7.4.9.10. Flight control events:

- Report any malfunction (including helicopter flight control, stability augmenter, autopilot, and trim systems) resulting in an unexpected, hazardous change of flight attitude, altitude, or heading.
- Report F-16 side stick controller interference (any source or reason).
- Report unintended departure from controlled flight for any reason. Do not report intentional departures.

★7.4.9.11. Report spillage or leakage of radioactive, toxic, corrosive, or flammable material from aircraft stores or cargo. Identify in the message which agency or unit prepared the shipment. If cargo is shipped under a waiver, tell which agency (MAJCOM, Numbered Air Force, etc.) granted the waiver. Send copy of message to HQ AMC SCOTT AFB IL//DOJCO//, phone number DSN 576-3967.

7.4.9.12. Report in-flight loss of all pitot-static instrument indications.

7.4.9.13. Report in-flight loss of all normal gyro-stabilized attitude indications.

★7.4.9.14. Report as a physiological mishap any episode that produces abnormal physical, mental, or behavioral symptoms that are noticed by other individual crewmembers. Report as a physiological mishap any episode that produces abnormal physical, mental, or behavioral symptoms that are noticed by the individual crewmember by others, during or after the flight. Report as a HAP any episode that could potentially effect the physical or mental capabilities of any of the primary aircrew to safely perform the mission. Do not report a physiological mishap as a DR. For example, a loss of cabin pressure from materiel failure may be reported by a DR of a valve, but the pilot's symptoms can only be reported through this instruction.

7.4.9.14.1. Report physiological mishaps by message and the AF Form 711GC, **Life Science Report of a Class C Physiological Mishap**.

7.4.9.14.2. Only report on passengers who have decompression sickness from evolved gas (skin, bends, chokes, or neurological or neurocirculatory involvement) or who have experienced a period of unconsciousness (ex. hypoxia, GLOC, toxic fumes, etc.) Do not report on aircrew members or passengers who experienced an unintentional loss of pressurization with no symptoms. However, the attending flight surgeon will brief all involved personnel on possible post-flight delayed complications, (such as decompression sickness), and procedures for obtaining medical treatment if those symptoms occur. If symptoms occur, submit the appropriate AF Form 711GC and message reports.

★7.4.9.14.3. The AF Form 711 GC with optional TOX and lab tests must be submitted for each mission qualified and staff aircrew with:

- Decompression sickness from evolved gas (skin, bends, chokes, or neurological or neurocirculatory involvement). Include 72-hour history with AF Form 711 GC.
- Illnesses causing incapacitation in-flight. Include 72-hour history with AF Form 711GC.
- Hypoxic (altitude) hypoxia (suspected, probable, or definite).
- G-induced loss of consciousness.
- Trapped gas disorders (ear, sinus, teeth, or abdominal) that are related to a pre-existing illness.
- Spatial disorientation of any type (including visual illusion) resulting in unusual attitude.

- Symptoms or health effects caused by toxic, noxious, or irritating materials such as smoke, fumes (including carbon monoxide) or liquids.
- Traumatic strains or injuries that are the result of required mission demands or activities. Report all G-induced strains.
- Any other condition or event the medical professional determines as significant to the health of the aircrew and provides useful safety information, e.g., degraded operational capabilities or retinal damage caused by lasers, military or commercial.

7.4.9.14.4. For mishap determination assistance contact AFSC/SEF, DSN 246-0837, commercial (505) 846-0837.
7.4.9.14.5. Send unclassified or declassified original audiovisual tape or film (such as a head up display VTR) concerning a physiological mishap to AFSC/SEF within 30 calendar days. AFSC/SEF makes a copy of the product, returns the original to the sender, produces an enhanced master recording for training, and distributes it to authorized requesters.
NOTE: Physiological mishap messages must have aircraft type (see fig 4.3, para 6).
★7.4.9.15. Report all explosive/missile releases impacting off of range property. The extent of damage will determine the class. If no damage occurred to the property, the mishap will be reported as a "Class C Flight (Explosive/Missile Involvement)."
★7.4.9.16. Report in-flight weather damage to live and captive explosives and missiles.
7.4.10. Report aircraft HAP events according to paragraph 4.3.3.
7.4.10.1. Report circumstances as HAP events when, in the judgment of the reporting official, there is a significant hazard to the crew or aircraft. Base this judgment on whether a similar event could result in serious injury, illness, or damage. This includes emergency conditions arising from aircraft operation or from the failure or malfunction of systems or components essential to safe flight.
7.4.10.2. Submit HAP messages as preliminary reports, followed by status reports and final reports. The convening authority or higher authority may decide a formal (AF Form 711-series) report is also required. If so, use the procedure in paragraph 7.4.8.
7.4.10.3. The action ALC, or other agency with engineering responsibility, sends AFSC/SEC a copy of each TDR originating from a HAP. Include all supporting documents, such as metallurgical analyses, photographs, and test reports.
7.4.11. **Reporting "Common Service" Engine Failures.** When a mishap involves aircraft and engines common to other US military services and the USCG (in table 4.3), send the message reports to the agencies indicated.
7.4.11.1. Only the respective safety centers exchange formal safety reports between services. Paragraphs 3.2.4 and 6.4.1 apply.
7.4.11.2. Air Force commanders forward requests to AFSC/SEC when they need information from or receive requests from any non-Air Force agency or another service.
7.4.12. **Air Force Participation in NTSB Investigations.** HQ USAF/SE determines Air Force participation as a "party" to NTSB investigations. In all such cases where such participation is found in the interest of the Air Force, HQ USAF/SE designates one individual as the Air Force's "party coordinator." See AFJI 91-206 for further information.

7.5. Reporting Ejections, Missing Aircraft, and Bird Strikes:
7.5.1. Report every ejection or manual bailout from an aircraft with an AF Form 711GA. When a safety investigation is not performed, such as in combat situations or where only a legal investigations is conducted, report as much of the information on the AF Form 711GA as possible.
7.5.2. Report missing aircraft according to AFI 13-202, *Overdue Aircraft*. Report a missing aircraft as a Class A mishap when it has been missing for 10 days. If the major effort of the search ends earlier, report the event as a Class A mishap at that time. Submit a preliminary report for a Class A flight mishap and start the investigation according to Chapter 3. Send reports on the same schedule as for a Class A flight mishap. The 30-day time limit for safety reporting starts on the date the preliminary report was sent. If the aircraft is later found, update the formal report with a status report, change the AF Forms 711 if needed, change any other information based on the investigation, and distribute to the original addressees.
★7.5.3. Bird strikes resulting in reportable (greater than $10,000 total) damage are reported according to this instruction. This includes when bird strikes occur to captive or live munitions (explosive/missiles) and these are reports as if the bird hit the aircraft. All bird strikes (damaging and non-damaging) are reported to the USAF Bash Team on an AF Form 853, **"AF Birdstrike Report."** Obtain additional information on bird hazard reduction from AFPAM 91-212, *BASH Management Technique,* and BASH management responsibilities in AFI 91-202 for additional information on BASH requirements.
★7.5.3.1. **Bird Strike Reporting.** Reporting all wildlife strikes, damaging and non-damaging, is a necessary part of an effective BASH plan. An in-depth knowledge of the circumstances leading to a wildlife strike is vital before realistic recommendations can be made.

- Installation flight safety officers must report all strikes to installation-owned Air Force aircraft regardless of the geographic location of the strikes. For strikes occurring at airfields other than home base, installation flight safety

officers will send the original report to HQ AFSC/SEFW and a copy to the flight safety office of the installation at which the strike occurs (including non-Air Force airfields).

- Report damaging and non-damaging strikes to installation-owned aircraft monthly on the electronic AF Form 853, AF Bird Strike Report. Reports are due by the 15th of the following month to HQ AFSC/SEFW. Report non-damaging strikes via the AFSC bulletin board or on disk. Report damaging strikes via the AFSC bulletin board. HQ AFSC/SEFW will accept negative replies by telephone, fax or e-mail. Address, phone numbers and email address follow USAF BASH Team, HQ AFSC/SEFW, 9700 AVE G SE, Bldg 24499, Kirtland AFB, NM 87117-5671; DSN 246-0698/5674/5679/5681 or Comm (505) 846-xxxx, fax x0684; email address hqafscsef@smtps.saia.af.mil.
- Required AF Bird Strike Report data fields are: Base and Unit Reporting Strike, MAJCOM, Reporting ICAO, Base Nearest the Strike, Base ICAO, Aircraft (no tail numbers), Date, Time, Estimated/Actual Cost of Damage, Damage Class, Period of Day, Flight Path in Relation to Clouds, Impact Point(s) on Aircraft and Description, Phase of Flight, Landing Lights, Strobe Lights, Low-Level Route (if applicable), Aircraft Speed, Altitude, Geographic Location, Bird Species and Bird Weight (when known), Number of Birds, Call Number (if remains identified by BASH Team), and Remarks (if any).
- Send feathers or feather fragments of all bird strikes and a copy of the corresponding AF Bird Strike Report to HQ AFSC/SEFW for identification. In the event that remains are found on the runway, they should also be sent to the BASH Team for identification with a report. Send only non-fleshy remains (beaks, feet, and feathers). The BASH Team will send identification letters to both the base reporting the strike and the base where the strike occurred.

★7.5.3.2. Address mishap messages containing birdstrike data according to table 4.2 and include the following information in paragraph 7 of the figure 4.3 message:

- Landing lights: on or off.
- Strobe lights: on, off, or not applicable (if not installed).
- Phase of flight: climb, touch and go, low level, etc.
- Aircraft speed: (KIAS).
- Altitude: (AGL and MSL).
- Flight path in relation to clouds: above, below, between layers, etc.
- Species and number of birds.
- Impact point on aircraft.
- Pilot warned of bird hazard: yes or no.
- Low level route number: (if applicable).
- Bird strike resulted in fire: yes or no.
- Geographic coordinates: (latitude and longitude).
- Remarks.

7.5.3.3. **Technical Assistance.** Technical assistance is available through the USAF BASH Team, HQ AFSC/SEFW, 9700 AVE G SE, Bldg 24499, Kirtland AFB, NM 87117-5671. DSN 246-0698/5674/5679/5681 or Comm (505) 846-xxxx, fax x0684, email address hqafscsef@smtps.saia.af.mil.

Chapter 8

MISSILE MISHAP REPORTING

★**8.1. General Information.** This chapter tells how to categorize and report missile mishaps. It covers ground and air-launched missiles, and subscale RPVs. Report full-scale RPV and UAV mishaps according to Chapter 7. When reporting multiple category mishaps, refer to the appropriate chapters of this instruction to provide all required information and include necessary addressees in the reports. Report inadvertent launching, firing, or releasing of missiles, missile trainers, and simulators, or damage to any of these systems.

8.2. Determining Missile Mishap Category. Mishaps occurring after normal launch without aircraft damage are missile mishaps. Categorize a mishap caused by malfunction of an explosive component or system external to the missile as an explosives mishap.

8.2.1. Report a missile (aircraft involvement) mishap when an Air Force aircraft, without intent for flight, is involved.

8.2.2. Report a flight (missile involvement) mishap when intent for flight is established and the aircraft receives reportable damage.
8.2.3. Report R&D missile mishaps when unprogrammed breakup, destruction, or damage of a missile (including Missile Support Equipment [MSE] and major components) occurs during DT&E, IOT&E, and FOT&E flight testing. This includes destruction of the missile in flight by range safety personnel.
★8.2.4. Report subscale RPV mishaps occurring during ground handling, transportation, or storage of RPVs as a missile mishap. Report damage during helicopter recovery operations (ground, water, or mid-air retrieval system [MARS]) as a Missile (Aircraft Involvement) Mishap.

★8.3. Determining Missile Mishap Accountability. HQ AFSC assigns a missile mishap to the organization possessing the missile at the time of the mishap. If the missile is in a state of transfer and possession is in doubt, HQ AFSC assigns the mishap to the organization responsible for the operation or area at the time of the mishap. For ARC missile mishaps ARC units should contact the appropriate ARC safety office if possession of a missile is in doubt. The ARC safety office will contact HQ AFSC for determination.

8.4. Classifying Missile Mishaps. Use the following paragraphs with paragraph 2.4 to determine missile costs only. Add other property damage, injury, or illness costs to the missile costs to classify the mishap.
8.4.1. Direct-costs are expenses of removing, replacing, or repairing damaged missile components, or equipment at launch facilities and field or depot-level maintenance facilities.
8.4.2. If the intended mission objectives are not met due to the failure of a nonrecoverable missile and damage results, report the acquisition cost of the launch vehicle in accordance with paragraph 2.4.3 and the acquisition cost of the payload.
8.4.3. If the missile or MSE functioning causes injury or illness, determine the class of the mishap by the extent of injury, illness, and damage.
8.4.4. Calculate MSE damage at the full cost of repair or replacement of the property, not counting normal launch residual damage.
8.4.5. If a missile or its debris impacts outside a designated safe or range area, classify the mishap according to reportable damage costs. If reportable damage does not occur, report the event as a Missile HAP. For nonrecoverable vehicles, when all mission objectives are not met, damage costs include the acquisition cost of the vehicle and payload (paragraph 8.4.2).
8.4.6. Compute all missile prelaunch damage occurring without the missile being launched, to include transportation and storage, at the full cost to replace or repair. These costs will include the direct labor and materials for the repair.
8.4.7. In an unprogrammed breakup or destruction after launch, but before all mission objectives have been met, use acquisition costs. If reparable, use full repair costs. ***NOTE***: Recovery is normally a mission objective for recoverable missiles.
8.4.8. Expected damage to parachute-recovered missiles resulting solely from surface impact during an otherwise normal recovery sequence is an operational expense and not reportable. If the damage is related to other abnormal events or is clearly excessive, classify the event according to the repair costs or loss involved. Abnormal events include torn parachutes, late recovery initiation, failure of a parachute to blossom or release, high winds, etc. Excessive damage includes buckling of the main fuselage, fire at impact, destruction of the payload section, etc.
★8.4.9. For subscale RPVs use the costing methods outlined in Chapter 2 but add the cost of additional payloads. Do not report damage or destruction resulting from use as an authorized target.
8.4.10. Weather damage to the dome of an air-launched missile experienced while carried aboard an aircraft in flight is reported as a flight or flight-related (missile involvement) mishap in accordance with Chapter 7. The total cost of repairs or component replacement establishes the class of the mishap. If the aircraft does not suffer reportable damage (greater than $10,000), the mishap will be categorized as “flight-related” and will not be rate-producing. Class D missile mishap requirement of paragraph 8.7 do not apply.
8.4.11. Unplanned events during aging and surveillance test firing of rocket motors are not mishaps, unless collateral damage occurs to items other than the rocket motor. Do not include the cost of the rocket motor when determining mishap cost.

8.5. Reporting Missile Mishaps:
8.5.1. **Addressing Missile Safety Reports.** Report missile mishaps to the addressees in table 4.2. Route formal reports according to table 5.2.
★8.5.2. Class D Reporting. For all air launched missile mishaps with damage costs between $2000 and $10,000 report as a Class D Mishap via message within 10 working days to AFSC/SEW and AIG 9404/SE/SEW using the format found in Figure 4.5. Do not report flight-related (missile involvement) mishaps under this paragraph.

★8.5.3. **Missile High Accident Potential (HAP) Events.** Sometimes an event may result in less than reportable injury, illness, or damage, but still reflect a high accident potential. Inadvertent launch of missile is reportable as a HAP event, as a minimum. Report the following as a missile HAP according to paragraph 4.3.3:

- The accidental escape or spillage of dangerous (toxic, caustic, or corrosive) material resulting in an individual receiving a precautionary checkup by medical personnel.
- Inadvertent firing of gas grain generators or other explosive devices within a missile.
- Missile drops exceeding TO drop criteria, as a minimum. Reference para 2.4.4.5.

★8.5.4. **Reporting Subscale RPV Mishaps.** Report subscale RPV mishaps according to Class C reporting procedures, regardless of class, when there is no injury or collateral damage (table 4.1). Normally, formal reports, memorandums of indorsement, and MOFEs are not required for these mishaps when there is no collateral damage or injury. However, the investigating command or HQ AFSC may request them on a case-by-case basis. The investigating MAJCOM will track recommendations until all actions are complete.

8.5.5. **Reporting R&D Missile Launch Mishaps (Alternate Method):**

★8.5.5.1. Missile mishaps during DT&E, IOT&E, and FOT&E missions do not require formal investigations when the following conditions are met:

- The missile or its debris does not impact outside the predicted impact limit parameters.
- The loss does not result in collateral damage or injury to personnel.
- The responsible engineering management agency, either the Launch Analysis Group (LAG) or the Air-Launched Missile Analysis Group (ALMAG), fully investigates the mishap to determine causes and recommended corrective actions.

8.5.5.2. To implement these alternate reporting procedures, the MAJCOM notifies HQ AFSC by submitting a plan detailing the investigation of the loss and the systems, tests, and operations involved.

8.5.5.2.1. MAJCOMs report these mishaps according to table 4.1. Send message reports, using the preliminary 8-hour message format in figure 4.2. Do not place privileged markings on these reports.

8.5.5.2.2. When the investigation is concluded, MAJCOMs provide a copy of the engineering analysis report and a brief summary report, including findings, causes, and recommended corrective actions, to AFSC/SEW. Include the name and number of the message reports on which the summary report is based, and the originating agency or office of primary responsibility.

8.5.5.2.3. For Class A and B mishaps, follow the review and tracking procedures in Chapter 6. For alternate reports a Letter of Administrative Closure will be accomplished to add the engineering analysis recommendations to the safety database.

★8.6. Designating and Reporting a Critical Profile RPV Mission. Designate specific subscale RPV missions as critical profile missions to inform the user and owning commander of the increased risk assumed in flying the requested profile. The user must reevaluate the requested profile and weigh its operational necessity against the probability of losing the RPV.

★8.6.1. RPV suppliers develop a method for evaluating mission profiles based on system limitations. Provide written notification to the user, the owning MAJCOM, and AFSC/SEW of the intent to fly a critical profile mission. Under severe time constraints, you may make telephone notification followed by hard copy.

★8.6.2. Designate RPV missions as critical profile missions when the following system limitations are exceeded:

- Any track required to meet the user's need placing the RPV within 10 seconds of the predefined range boundary. Base time on a turn to 90 degrees convergence at the anticipated air speed.
- Any altitude required to meet the user's need placing the RPV at or below the minimum altitude at which the system is designed to be reliably operated.
- Any presentation placing the RPV at or beyond line-of-sight control or tracking capabilities.
- Any presentation requiring the RPV to maneuver at the limits of its aerodynamic capabilities or in excess of known subsystem limitations.
- Any required presentation which saturates control system capabilities, including the RPV controller.

★8.6.3. If a RPV mishap occurs during a critical profile mission, send a preliminary safety report identifying the mishap mission profile as critical, explaining why the profile was critical, describing the mission phase during which the mishap occurred, and identifying how AFSC/SEW was notified per paragraph 8.6.1 (such as subject and message date-time group, or memorandum date).

★8.6.4. HQ AFSC evaluates the preliminary report to determine reportability under this instruction. If the mishap is solely a result of the RPV being flown within critical profile parameters, and if there are no injuries, collateral damage, or other

circumstances requiring reporting under this instruction, HQ AFSC will determine the event not reportable, and further investigation and reporting is not required.
8.6.4.1. If the preliminary investigation indicates the mishap cause is not one of the factors making the profile critical, then continue investigating and reporting according to this instruction.
8.6.4.2. MAJCOMs and local agencies may use more restrictive criteria to evaluate mission profile risk and determine risk assumption level of approval.

Chapter 9

SPACE MISHAP REPORTING

9.1. General Information. This chapter tells how to classify and report space mishaps. Responsibility for space assets continues until all normal expected space flight operations have ended (satellite is finally deorbited, achieves an earth-escape trajectory, etc.). Intercontinental Ballistic Missile (ICBM) mishaps are not considered space mishaps: Report them according to chapter 8.
★9.1.1. **Space Mishaps, Ground Involvement.** Space mishaps which occur prior to launch, or involves a unique space support system which does not leave the ground shall be classified as a space mishap with ground involvement. For example:

★9.1.1.1. While lifting a payload with a mobile service tower crane, a gust of wind swings the payload into the mobile service tower damaging the payload.
★9.1.1.2. While transferring propellant from the storage tank to the launch vehicle, the control system malfunctions and the launch vehicle's tank is over-pressurized by the fueling system.
★9.1.2. **Ground Mishap, Space Involvement.** Mishaps which occur prior to launch or is limited to components or equipment commonly used in non-space applications and not specifically configured for space related use, then the mishap will be classified as a ground mishap with space involvement. For example:
★9.1.2.1. While moving a stacked TITAN IV from the stacking facility to the launch pad one of the locomotives derails and catches fire, however, there is no damage to the space assets.
★9.1.2.2. While working on a hyperbolic storage tank, a worker falls and seriously hurts himself.

9.2. Assigning Space Mishap Accountability. HQ AFSC assigns a space mishap to the organization or developmental agency possessing or controlling the system at the time of the mishap.

9.3. Classifying Space Mishaps. The following paragraphs tell which types of events require reporting and how to determine space systems damage costs. Include all property damage, injury, or illness costs when classifying space mishaps. Classify launch mishaps according to paragraph 2.4, and orbital mishaps according to paragraph 9.3.2.
9.3.1. When a commercial enterprise or another agency uses an Air Force space system or space support system elements, report damage occurring to Air Force resources according to the appropriate memorandums of understanding. If the event does not cause collateral Air Force property damage, injury, or illness, it is not a reportable mishap. If it represents a high potential for damage to Air Force space system elements, report it as a HAP event. When Air Force space operations support commercial or other agency space systems, safety reporting requirements are the same as for Air Force systems.
★9.3.2. Alternate reporting methods, when approved, may be used for orbital mishaps. When a MAJCOM has an established and approved review process for orbital mishaps, the report of thea review may be used in lieu of a formal report. Request a waiver fo the formal report as outlined in paragraph 5.3. of this instruction. The investigating officer or board president must insure the MAJCOM alternate reporting fully supports the findings, causes, and recommendations identified in the final mishap message. Report the loss of on orbit space system mission capability as follows:

- Permanent Total Loss of All Mission Capability: Class A.
- Permanent Total Loss of Primary Mission Capability: Class A.
- Permanent Total Loss of Secondary Mission Capability: Class A.
- Permanent Partial Loss of Primary Mission Capability: Class B.

9.3.3. Report inability to retrieve recoverable space system elements as space mishaps. Do not report normal expected damage to recoverable space systems during an otherwise normal recovery sequence.

9.3.4. Report space mishaps and space HAP events involving radioactive material or nuclear power systems as radiological mishaps according to chapter 12.
9.3.5. Report the impact of a space system and its associated debris outside predicted impact limit parameters as a space mishap, and classify the mishap according to damage costs (paragraph 2.4). If no reportable damage occurs, report the impact as a HAP event.
9.3.6. Report failure of a satellite to operate after being placed into orbit as a space mishap if there is detectable damage or permanent loss of mission capability.
9.3.7. Report injury, illness, or physiological episode during space system operation or space system processing as a space mishap paragraph 11.4.1.
9.3.8. Report damage to space or space support systems being procured by an Air Force contract when the event occurs on Air Force property. This includes contractor occupied facilities on Air Force installations.
★9.3.9. Report the loss or damage of Air Force space systems during launch or processing on commercially procured launch systems. Contact appropriate Major Command Safety office for implementation of memorandum of agreements with FAA/AST and the responsible commercial entity. The external agency report may be used as the official final mishap investigation report with AFSC approval.
9.3.10. **Reporting Space Launch Mishaps (Alternate Method):**
★9.3.10.1. Space launch mishaps may be investigated and reported using alternate procedures when the following conditions are met:

- The space system or its debris does not impact outside the predicted impact limit parameters.
- The loss does not result in collateral damage or injury to personnel.
- An engineering analysis will fully investigate the mishap to determine causes and recommended corrective actions.

9.3.10.2. To implement these reporting procedures, the MAJCOM notifies HQ AFSC by submitting a plan detailing the investigation of the loss and the systems, tests, and operations involved.
9.3.10.3. MAJCOMs report these mishaps according to table 4.1. Send message reports, using the preliminary 8-hour message format in figure 4.2. Do not place privileged markings on these reports.
9.3.10.4. When the investigation is concluded, MAJCOMs provide a copy of the engineering analysis report and a brief summary report, including findings, causes, and recommended corrective actions, to HQ AFSC/SEW. Include the name and number of the message reports on which the summary report is based, and the originating agency or office of primary responsibility.
9.3.10.5. For Class A and B mishaps, follow the review and tracking procedures in Chapter 6. For alternate reports a Letter of Administrative Closure will be accomplished to add the engineering analysis recommendations to the safety database.

★9.4. Addressing Space Mishap Reports. Report space mishaps to the addressees in table 4.2 according to the time schedule in table 4.1. Route formal reports according to table 5.4. For Space/Ground Involvement add the ground addresses to the space addressees listed in Table 4.2. For Ground/Space Involvement, ensure space addressees are added to the ground address list.

9.5. Reporting Space System High Accident Potential (HAP) Events. Report space HAP events according to paragraph 4.3.3. As a minimum, report the accidental escape or spillage of dangerous (toxic, caustic, or corrosive) material that results in an individual receiving a precautionary checkup by medical personnel.

Chapter 10

EXPLOSIVES MISHAP REPORTING

10.1. General Information. Mishaps involving explosives may be categorized as explosives, explosives (aircraft involvement), explosives (missile involvement), explosives (space involvement), explosives (nuclear weapon involvement), and explosives (nuclear reactor or radiological involvement). In addition, explosives may be involved in other categories of mishaps, such as flight (explosives involvement), flight-related (explosives involvement), missile (explosives involvement), space (explosives involvement), and ground mishaps. When reporting multiple category mishaps, refer to the appropriate chapters of this instruction to provide all required information and include the necessary addressees in the reports. The following additional guidance applies:

10.1.1. Report mishaps caused by damage to explosives, weapons suspension, control, or release systems; personnel error; or materiel failure during explosives operations as explosives mishaps. Mishaps occurring after normal release and not resulting in aircraft damage are explosives mishaps (paragraphs 10.3 and 10.5). Report investigations identifying a deficiency affecting the nuclear weapons system of a combat delivery vehicle according to chapter 12.
10.1.2. If an aircraft is involved in a mishap meeting the explosives definition and intent for flight is not established, the category is explosives (aircraft involvement). If intent for flight is established, the category is either flight (explosives involvement), or flight-related (explosives involvement), depending upon damage to the aircraft itself (details are in Chapter 7). If there is no damage to the aircraft, report the mishap as explosives only. Include the information required by paragraph 10.5 in the reports.
10.1.3. Report a mishap caused by malfunction of an explosive component external to the missile as an explosives (missile involvement) mishap.
10.1.4. If nuclear mishaps involve explosives, include the explosives information required by item 7, figure 4.3, in the nuclear safety report.
10.1.5. Report any inadvertent release of a toxic chemical agent into the atmosphere as an explosives HAP, even though no damage, illness, or injury occurs (unless it meets a higher mishap classification criterion).

★**10.2. Assigning Explosives Mishap Accountability.** HQ AFSC assigns a mishap to the organization possessing the explosives or toxic chemical agents at the time of the mishap. If the explosives are in a state of transit, holding, or transfer at the time of the mishap, possession may be in doubt. In such cases, HQ AFSC assigns the mishap to the organization responsible for the operation or area at the time of the mishap. For ARC explosive mishaps ARC units should contact the appropriate ARC safety office if possession of an explosive is in doubt. The ARC safety office will contact HQ AFSC for determination.

10.3. Classifying Explosives Mishaps. Classify explosives mishaps according to the severity of damage, injury, or occupational illness (paragraph 2.3). Calculate the cost of explosives mishaps according to paragraph 2.4. For explosives or toxic items expended in the mishap use the full current-stock-catalog replacement value if the item was serviceable and would normally be replaced in the inventory. Do not count the cost of the expended item if it was intentionally expended (such as EOD) or if it was not serviceable.

10.4. Reporting Explosives Mishaps:
10.4.1. Class A and B Explosives Mishaps require both message and formal reports.
10.4.2. Report Class C Explosives Mishaps by message.
★10.4.3. Any explosives mishap that does not meet the reporting criteria of a Class A, B, C, or D, should be reported as a HAP. For example, the inadvertent functioning of an explosive device that costs less than $2,000 should be reported as a HAP. Report explosives HAP events according to paragraph 4.3.3.
10.4.4. Report explosives mishaps to the addressees in table 4.2 according to the schedule in table 4.1. Route formal reports according to table 5.3.
★10.4.5. Combine safety reports and DRs may be submitted if materiel deficiency is identified as the only cause of a Class C explosives mishap or HAP event.
10.4.5.1. Use the format in TO 00-35D-54, *USAF Materiel Deficiency Reporting and Investigating System*, and include Class C or HAP event and DR report control numbers. Follow the reporting schedule in table 4.1. Add the addressees required from table 4.2 to those required by TO 00-35D-54, *USAF Materiel Deficiency Reporting and Investigating System*, but do not duplicate addresses.
10.4.5.2. Safety personnel will prepare Item 22, the safety portion of the combined report. Submitting a combined report eliminates the need for a separate safety message.
10.4.5.3. The final DR reply normally constitutes closing action.
10.4.5.4. Combined Class C or HAP safety reports and DRs are not privileged reports, nor are they FOUO. They must not contain privileged information.
★10.4.6. **Class D Reporting.** Report all mishaps involving munitions that sustain damage costing between $2,000 and $10,000 report as a Class D mishap via message within 10 working days to HQ AFSC/SEW and AIG 9404/SE/SEW using the format found in Figure 4.5.

10.5. Documenting Explosives Effects. For Class A and B explosives mishaps and all other mishaps involving munitions/explosives items that are engulfed in flames and/or cook-off, contact HQ AFSC/SEW to report specific technical data according to DoD 6055-9 STD, *DoD Ammunition and Explosives Safety Standards*, chapter 13.

Chapter 11

GROUND MISHAP REPORTING

★**11.1. General Information.** Air Force ground mishaps include all mishaps not categorized as aircraft, missile, space, explosives, miscellaneous air operations, foreign object damage, or nuclear mishaps. Investigate injury mishaps involving fire as a joint ground safety and fire department effort. Refer to AFI 91-301 for reporting required by OSHA. Ground mishaps are subcategorized as: Combat Training, Contractor, GMV, Industrial, Marine, Miscellaneous, PMV, Sports and Recreation and SPV. Ground mishap can be further cross categorized as Ground (Aircraft Involvement), Ground (Missile Involvement), Ground (Explosives Involvement) and Ground (Space Involvement)(See chap 9).

11.2. Assigning Ground Mishap Accountability:

11.2.1. The Air Force assigns a mishap to the command which experienced the loss. When two or more commands have losses in the same mishap, HQ AFSC will assign the mishap to one command. Submit only one report for each mishap.

11.2.2. Record military or civilian injury losses to the assigned command of the personnel at the time of the mishap. Use military data reporting and activities and civilian payroll records to make the determination.

11.2.2.1. Assign a mishap occurring to an individual in any permanent change of station (PCS) status to the losing command until the individual signs in at the new duty station. The Transfer Effective Date (TED) is not a criterion.

11.2.2.2. Assign mishaps involving personnel being transferred PCS with temporary duty pending further orders (TDPFO) to the organization originating the initial orders until the individual signs in at the next permanent duty station.

11.2.3. Record mishaps involving Air Force military members in nonpay status while awaiting appellate review (appellate leave) of a court martial conviction to the Air Force at large. For mishap reporting purposes, the member is returned to active duty when notified (written or verbal) to return to an Air Force installation.

★11.2.4. Assign a ground mishap resulting in property damage to the owning command, regardless of who may have caused the mishap. If two or more commands experienced losses, refer to para 11.2.1 above. Assign an Air Force GMV mishap to the command owning the GMV. When a host unit makes an Air Force GMV available to a tenant unit on a recurring or permanent dispatch, the using organization is the owning command. *EXCEPTION*: for damage due to propeller or rotor wash or jet blast, see paragraph 7.2.2.

★11.2.5. HQ AFSC assigns a mishap involving damage to a weapon system to the command possessing the system at the time of the mishap according to AFI 21-103.

11.2.6. If a contractor mishap results in reportable damage to Air Force property, assign the mishap to the command negotiating the contract.

11.3. Classifying Ground Mishaps. Paragraph 2.3 provides procedures for classifying ground mishaps. Paragraph 2.4 describes how to determine mishap costs. Use the following guidance to determine GMV and special purpose vehicle (SPV) damage costs:

11.3.1. **Determining Air Force Repair Costs:**

- Material Cost. Use the material costs shown on AFTO Form 91, **Limited Technical Inspection-Motor Vehicles**, or AF Form 1823, **Vehicle and Equipment Work Order.**
- Labor Cost. Use the direct man-hours on AFTO Form 91 or AF Form 1823. Multiply man-hours by $16 per hour.
- Total Cost. Combine material cost and labor cost to determine total cost.

11.3.2. **Determining Contractor Repair Costs.** Use the total cost of repair for vehicles repaired by contractor. It is not necessary to separate cost of material and labor.

11.4. Reporting Ground Safety Mishaps. The detail of ground safety reports depends upon two basic factors; the severity of the mishap, and the extent of preventive actions the Air Force can take. The mishap classification procedures in paragraph 2.3 define severity. The circumstances of the mishap determine how much the Air Force can do to prevent future mishaps.

★11.4.1. **Reporting On-Duty Ground Mishaps:**

11.4.1.1. **Class A and B ground (aircraft involvement) mishaps**:

★11.4.1.1.1. Submit preliminary, status, and final message reports according to the schedule in table 4.1 with routing as in table 4.2. The preliminary message report must contain only factual information in the narrative portion of the CMR; see instructions for Item 9 in figure 4-2.

★11.4.1.1.2. For Class A and B ground (aircraft involvement) mishaps, prepare two-part reports. Paragraphs 5.4 and 5.5 provide procedures for preparing two-part reports. Figure 5.1 provides a sample witness statement format for use when a privileged witness statement is needed. Submit formal reports to the addressees in table 5.5. Use memorandums of transmittal as outlined in paragraph 5.11 and Figure 5.6. Forms required include:

- AF Form 711, **USAF Mishap Repor*t***
- AF Form 711GA, **Life Sciences Report of an Individual Involved in an AF Flight/ Flight Related Mishap** (at Tab Y in Part II). Complete this form only if aircrew members are involved in the mishap.
- AF Form 711H, **USAF Mishap Report Checklist and Index.**
- AF Form 711I, **USAF Mishap Report Index Tab, Part One-Facts.**
- AF Form 711J, **Mishap Report Index Tab Part Two-Board of Investigator Analysis.**
- Other supporting documentation as required.

★11.4.1.1.3. Class A and B (aircraft involvement) ground mishap formal reports are privileged reports and will include, as a minimum:

- Part I - Facts
  - •• Tab B, Preliminary Message Report. Place the fully releasable preliminary message report in Tab B. (Place the investigator's analysis, findings, causes, and recommendations contained in the consolidated mishap report (CMR) in Tab T.)
  - •• Tab R, Diagrams. If photographs are not available or specific. Ensure diagrams are self-explanatory, indicating mishap locations in association with structures, facilities, etc.
  - •• Tab S, Photographs. Well-defined 8 by 10 inch glossy color photographs help in mishap analysis.
- Part II - SIB or Investigator Analysis

  •• Tab T, Investigation, Analysis, Findings, and Recommendations. This is the most important part of the report. It draws on all portions of the report to provide a complete picture of what happened. It is a thorough analysis of all evidence and the findings, causes, and recommendations.

  •• Tab U, Statements and interview transcripts: Include only a list of witnesses interviewed. As well as those statements the SIB feel are pertinent.

  •• A memorandum of transmittal.. (See Figure 5.6)

11.4.1.1.4. Mark assembled formal two-part reports and all pages in Part II as described in paragraph 4.10.2.

11.4.1.2. **All other Class A and B Ground on-duty mishaps**:

★11.4.1.2.1. Class A and B ground on-duty mishap formal reports (excluding aircraft involvement) will include as a minimum:

- A CMR final message.
- AF Form 711, **USAF Mishap Repor*t***
- Diagrams (if photographs are not available or specific).
- Photographs (if needed to enhance mishap narrative).
- A list of witnesses interviewed and witness statements.
- A memorandum of transmittal. (See Figure 5.6)

★11.4.1.3. **Class A and B ground mishaps reports require**:

- A five-part narrative: brief synopsis or narrative of the mishap, investigation and analysis, findings, causes, and recommendations, according to paragraph 3.12.1 and will be reported in a CMR format. Clearly show the scope of the investigation (evidence examined) and analyze the evidence presented (thought process and conclusions). Explain why certain possibilities are eliminated, but others are retained. Mark assembled formal reports as in paragraph 4.10. See Chapters 4 and 5 for complete guidance on preparing message and formal reports.
- A command indorsement (paragraph 6.1). HQ AFSC, with the investigating MAJCOM, may waive certain formal reports (paragraph 5.3). In this case, the command indorsement is based on the final message report.

11.4.1.4 **Class C Ground Mishaps**:

★11.4.1.4.1. On-duty Class C mishaps that have AF-wide crosstell value or contain circumstances that are beyond the unit's control to fix (i.e., equipment defects, hazards, technical data/orders changes, etc.) will include a narrative to fully explain the mishap. Reporting will be accomplished by CMR in accordance with figure 4.3. The narrative will follow the same format as for class A and B mishaps (see para 11.4.1.3).

★11.4.1.4.2. On-duty Class C mishaps that have little AF-wide crosstell value or mishap circumstances are completely within the unit's control to fix (i.e., minor slips, trips, or falls; horseplay that results in minor injury; etc.) will be reported using an abbreviated CMR. (See Figure 11.1) These mishaps will be upchanneled once a month. according to Table 4.1.

Addressing should be in accordance with Table 4.2. Within ASAP, the screens to be completed are: Event, Mishap, Person, Injury, and Finding. If an object was involved, include the Object Screen.

★11.4.1.5. **Class D Ground Mishaps**: Record Class D ground mishaps involving injury to on duty Air Force military and civilian personnel on a log (automated or manual). AF Form 739 is acceptable for logging these injuries.

- The host ground safety staff is the official Air Force office of record for Class D ground safety data and reports.
- The host base safety staff must provide an annual OSHA report (AF Form 739 is acceptable) to tenant commands with upchanneling to HQ AFSC. Tenant commands may require monthly data. Refer to paragraph 4.12 for annual reporting requirements.

★11.4.2. **Reporting Vehicle Mishaps.** All mishaps involving GMVs or SPVs in an operational (when engine is running) mode are on-duty mishaps, except as noted in paragraph 11.4.2.1 third bullet. T.O. 36A-1-1301 contains a complete list of GMVs and SPVs.

★11.4.2.1. GMVs may be owned, leased, or rented by the Air Force:

- Owned GMVs. These are Air Force registered GMVs not identified as SPVs ("B", "V", and "K" series general purpose vehicles).
- Leased GMVs. These are General Services Administration (GSA) vehicles leased on a long- or short-term basis.
- Rented GMVs. These are vehicles rented by Air Force officials, such as the base transportation officer. Vehicles rented by Air Force individuals in the performance of their duties are GMVs. For investigating and reporting purposes, rental cars authorized by travel orders are GMVs. The mishap report narrative will identify if rental vehicle was authorized and will identify if events occurring just prior to the mishap were incidental to normal TDY. (e.g., If individual was traveling to dinner or getting gasoline, those occurrences would be expected as part of the TDY and the mishap would be classified as an on-duty GMV mishap.) If investigation shows that Air Force Personnel were using an authorized rental car to go to the movie or sight seeing, the mishap would be classified as off-duty miscellaneous. If investigation shows positive BAT by the Air Force operator, the mishap will be classified as an off-duty miscellaneous. A positive BAT indicates the vehicle operator deviated from what is considered 'incidental to normal TDY' and will therefore be classified as an off-duty mishap.

11.4.2.2. Examples of mishaps involving Air Force GMVs include:

- Collisions with other vehicles by GMVs.
- Injuries or property damage due to shifting cargo in moving GMVs.
- Injuries which occur while in or falling from moving GMVs.
- Injuries or damage resulting from towing or pushing GMVs.
- Injuries to pedestrians requiring treatment greater than first aid resulting from GMVs.
- Collisions with other vehicles when GMVs are stopped at a stop light or other traffic control device.
- Collisions involving properly parked GMVs.

11.4.3. **Reporting Off-Duty Ground Mishaps:**

★11.4.3.1. Report Class A and B off-duty ground mishaps by messages according to the schedule in table 4.1. Ensure these message reports contain all required mishap data elements. See figure 4.3. For MINIMIZE instructions, see paragraph 4.6. Route the mishap message reports according to table 4.1 (during declared or war emergency conditions use (emergency status code C-2).

★11.4.3.2. Report Class C off-duty ground mishaps using an abbreviated CMR format. These event files will be upchanneled once a month according to Table 4.1. The minimum required information is specified in Figure 11.1.

11.4.3.3. Report injuries sustained by military members working as part-time NAF employees as on-duty military mishaps, even though the members are in off-duty status. Use the full CMR format (figure 4.3) for Class A and B mishaps. For Class C mishaps, see paragraph 11.4.1.4.

11.5. Reporting Ground (Aircraft Involvement) Mishaps. These are mishaps where an Air Force aircraft is damaged or the aircraft (or an aircraft system) causes damage or injury but there is no intent for flight (see Glossary). Report these mishaps using the CMR format of figure 4.3. Refer to Chapter 1 for privileged aircraft involvement reporting.

★11.6. Ground (Space Involvement) Mishaps. These are mishaps involving space systems or unique space support systems which are limited to components or equipment commonly used in non-space related applications and not specially configured for space related use. Ensure space addresses are added to the ground addressee list in Table 4.2 for these mishaps.

11.7. Reporting High Accident Potential (HAP) Events. Sometimes an event results in less than reportable damage or injury, but still has a high mishap potential. In such a case, the reporting official may report it as a HAP event (paragraph 4.3.3).

★**11.8. Reporting Occupational Illness.** Base medical services personnel identify, investigate, and report occupational illnesses. They electronically transmit an epidemiological event record to Armstrong Laboratory as required by AFI 48-105, ***Surveillance, Prevention, and Control of Disease and Conditions of Public Health and Military Significance***. Some occupational illnesses are originally reported on CA Forms 1, 2, and 6 or LS Form 202, **Employer's First Report of Injury or Occupational Illness**. The civilian personnel office forwards copies of any report to the Public Health (PH) office and information copies to the base safety office. The medical personnel, in conjunction with safety personnel, determine if the case is classified as an illness or an injury.

11.9. Additional Reporting by Nearest Installation. Chapter 1 lists responsibilities of the Air Force installation closest to the scene of a mishap. For ground mishaps, use the following additional guidance:

11.9.1. For all mishaps, the safety staff of the nearest Air Force installation notifies the installation, or organization experiencing the loss in the mishap by telephone or message. If the mishap involves more than one command, notify each command.

11.9.2. For Class A and B Ground mishaps**:**

★11.9.2.1. Prepare and transmit, as a minimum, the preliminary and status message reports unless investigative responsibility is assumed by the MAJCOM experiencing the loss.

11.9.2.2. Enter the words "courtesy report" and the base code and assigned serial number in the subject line of the mishap message. These are obtained from the parent installation or organization.

11.9.2.3. Provide all required assistance to the installation or MAJCOM experiencing the loss so the organization can submit the final message report and the formal report.

11.9.2.4. If requested by the accountable unit, obtain the mishap event number, traffic and other training data, and other required information from the parent organization and prepare and submit required safety messages. After transmission of the safety message, the reporting unit will remove the mishap information from their database and the accountable unit will enter the information in their database. Coordinate with the accountable unit on method of file transfer (i.e., message, upchanneled disk, etc.).

11.9.2.5. Notify the nearest OSHA regional or area administrator within 8 hours when a mishap involves fatal occupational injuries or illnesses to an Air Force or non-Air Force civilian; or injuries or illnesses that require inpatient hospitalization of three or more Air Force or non-Air Force civilians. If unable to contact the nearest OSHA area office within the required time frame, contact the OSHA 24-hour toll-free hot line (1-800-321-OSHA).

11.9.3. For Class C Ground mishaps:

11.9.3.1. Obtain the mishap event number, traffic or other training course data, and other required information from the organization experiencing the loss.

11.9.3.2. Provide Class C mishap investigation report to the accountable unit. Coordinate the method of file transfer with the accountable unit. The accountable unit is required to upchannel Class C information through command channels to HQ AFSC. The nearest installation will coordinate with accountable unit on preferred reporting process.

★**Figure 11.1. Abbreviated CMR.** ***(NOTE: BOLD ITALIC reflect minimum information that must be included in this abbreviated message format.)***

TO: (SEE TABLE 4.2)
FROM: (ORIGINATOR)
UNCLAS
FOR OFFICIAL USE ONLY

SUBJ: CLASS, CATEGORY, CROSS CATEGORY INVOLVEMENT, SUBCATEGORY, REPORT STATUS, MISHAP EVENT NUMBER. ***(***Example: Class C Ground, Industrial Aircraft , Final Report 96/03/07, PLEH, 001C (paragraph 4.8.2, this instruction))

NOTE: For category, cross category involvement, and subcategory, see table 4.5.

PRIVACY ACT STATEMENT
AUTHORITY: 10 U.S.C., CHAPTER 40; 37 U.S.C., CHAPTER 9; EO 9397, NOVEMBER 1943. PRINCIPAL PURPOSES: USE FOR SAFETY MISHAP REPORTING ONLY. ROUTINE USES: USE FOR SAFETY MISHAP REPORTING ONLY. DISCLOSURE: DISCLOSURE OF SSN IN VOLUNTARY.

1. ***Location of mishap***:
1.1. ***Location***: (Identify the specific location where mishap occurred, e.g., east end of hangar; hospital lobby; off-base private residence, etc. Include base name)
1.2. ***Duty Status***: on duty or off duty.
1.3. ***State and country of mishap***.
1.5. ***Local Time***.

2. ***Accountability***:
2.1. ***MAJCOM***. (As identified in Table 4.5)
2.2 ***Numbered Air Force, ALC, PCTR***.
2.3. ***Wing/Group***
2.4. ***Squadron/Unit***.
2.5. ***Base code***. (AFPAM 10-203, ADE GE-611)

3. ***Environmental factors***:
3.1. ***Weather was a factor*** (Y or N).
3.2. ***Day or night***.

4. ***Damage and injury cost estimates***:
4.1. ***Mishap cost NONAF***: Estimate of damage to non-Air Force property, including other DoD and non-DoD property.
4.2. ***AF cost damage***: Cost of damage to AF property, including labor and materiel.
4.3. ***Cost total injury***: Cost of injuries to AF personnel, including military and civilian.
4.4. ***Total mishap cost*** (sum of costs in items 4.1 through 4.3).

5. ***Personnel involved***: Give the following data on each person involved. If more than one person is involved, provide information in subparagraphs entitled "Person 1," "Person 2," etc. Repeat entry 5.1 through 5.1.17 for each person involved in the mishap. Number as 5.X through 5.X.17.
5.1. ***Last name, first name, MI of mishap individuals***.
5.1.1. ***SSAN***.
5.1.2. ***Gender***.
5.1.3. ***Age***.
5.1.4. ***Grade***. (As identified in Table 4.5)
5.1.5. ***Duty AFSC or job series***.
5.1.6. *Time on Duty*.
5.1.7. ***Activity at time of mishap***. (As identified in Table 4.5)
5.1.8. ***Role in event***. (As identified in Table 4.5)
5.1.9. ***Functional area***. (As identified in Table 4.5)

Figure 11.1. Continued.

5.1.10. ***Organization assigned***. If the organization is same as paragraph 2, state "same as paragraph 2."
5.1.10.1. ***MAJCOM***. (As identified in Table 4.5)
5.1.10.2. ***Numbered Air Force, ALC, PCTR***.
5.1.10.3. ***Wing/Group***.
5.1.10.4. ***Squadron/Unit***.
5.1.10.5. ***Base***.
5.1.11. ***Component***. (As identified in Table 4.5)
5.1.12. ***TOX testing*** (positive, negative, pending, or not accomplished). Since TOX test results are a special command interest item, if positive or not accomplished, explain in narrative. TOX testing information must be identified in all mishaps.
5.1.12.1. ***Substance type***. (As identified in Table 4.5)
5.1.12.2. ***Substance level***.
5.1.13. ***Injury class***. (As identified in Table 4.5)
5.1.13.1. ***Days Hospitalized.***
5.1.13.2. ***Days on Quarters.***
5.1.14. ***Part of body injured***. (As identified in Table 4.5)
5.1.15. ***Type injury***. (As identified in Table 4.5)
5.1.16. ***Was individual training a factor in the mishap*** (Y or N)? Types of training include traffic safety, job task, life support, etc. If training was factor, explain in short narrative or findings.
5.1.17. ***Safety equipment***. Select available safety equipment (maximum of three) from table 4.5, and state if it was used (Y or N) and if it worked (Y or N). Use following format: seat belts/yes/yes; parachute/yes/no/; helmet/no/(blank). For PMV Mishaps, seat belt and/or harness use and helmet use (which is applicable) must be identified

(Complete Para 6 in Property or object is involved)
6. ***Property data***. Give following data on each piece of property involved. If more than one piece of property is involved, provide information in subparagraphs entitled "Object 1," "Object 2," etc.
6.1. ***Property identification (if property involved)***. Repeat all of entry 6.1 for each item if more than one of the same type is involved. Number as 6.X.1 through 6.X.6. (e.g. truck and bicycle)
6.1.1. ***Organization assigned***. If the organization is same as paragraph 2, state "same as paragraph 2."
6.1.1.1. ***MAJCOM***.
6.1.1.3. ***Wing/Group***.
6.1.2. ***Description***
6.1.3. ***Vehicle or equipment serial (ID) number***.
6.1.4. ***Object or vehicle activity at time of mishap.(As identified in Table 4.5)***
6.1.6. ***Cost to repair or replace***.

7. ***Narrative***. If the who, what, when, where and why are not adequately addressed in other portions of the report, give a short, concise, chronological description of the facts and circumstances leading to the mishap. List traffic safety courses by type and date of completion. .

8. ***Findings and causes***. Use the CAR methodology from paragraph 3.15.4, this instruction. ***At least one finding must be causal***.

9. Preventive action recommended or taken. Repeat entries 9.1 through 9.X as necessary.

10. Cognizant official and investigator, unit, office symbol, and telephone number (DSN and commercial).
NOTE: The CMR format provides the user appropriate fields based on mishap class and category.

Chapter 12

NUCLEAR MISHAP AND SAFETY DEFICIENCY REPORTING

★12.1. Scope, Objectives and Accountability:

12.1.1. **Scope and Objectives.** All nuclear weapon system, nuclear reactor system, and radiological accidents and incidents are categorized as nuclear mishaps and are reportable under this instruction. Nuclear safety deficiencies that could result in a mishap are also reportable under this instruction.

12.1.1.1. DoDD 5100.52, *DoD Response to an Accident or Significant Incident Involving Radioactive Material*, requires immediate notification of appropriate officials of a nuclear mishap. JCS Pub 1-03.6, *Joint Reporting Structure, Event/Incident Report*, JCS Pub 6-04.22, *USMTF Message Preparation Instructions*, AFMAN 10-206, *Operational Reporting*, and this chapter implement the requirement.

12.1.1.2. The requirement for reporting nuclear weapon system safety deficiencies supports the objectives of AFI 91-101, *Air Force Nuclear Weapons Surety Program.* Reporting nuclear reactor system and radiological safety deficiencies supports the objectives of AFI 91-109, *Air Force Nuclear Reactor Program*, AFI 91-110, *Nuclear Safety Review and Launch Approval for Space or Missile Use of Radioactive Material and Nuclear Systems*, and AFI 40-201, *Management of Radioactive Materials in the Air Force*. These objectives are to prevent nuclear mishaps, to minimize their effects if they should occur, and to reduce the occurrence of other nuclear weapon system safety deficiencies. Deficiency reports bring actual or potential problems to the immediate attention of agencies who can evaluate the situation and correct the problems.

12.1.2. **Accountability.** All nuclear mishaps and safety deficiencies will be investigated according to chapter 3. While the results of these investigations play a direct role in the mishap prevention process, the indiscriminate use of statistical comparisons between units can jeopardize accurate reporting.

12.1.2.1. Since nuclear mishaps are rare, statistical comparison is inappropriate. Do not make statistical comparisons of different commands or units using nuclear mishap reports as a source.

12.1.2.2. Since the criteria for the submission of safety deficiency reports are so broad that in many instances, whether or not to report an event becomes a matter of the commander's judgment. Therefore, comparing nuclear safety statistics between commands or operating units may not provide accurate trend information for managerial analysis. Use safety deficiency reports only to identify potential problems and corrective measures. Do not publish statistical comparisons of different commands or units using safety deficiency reports as a source.

★12.2. General Reporting Requirements and Procedures.

12.2.1. **General Reporting Requirements.**

12.2.1.1. Reports required by a MAJCOM neither supersede nor nullify this instruction's reporting requirements.

12.2.1.2. This instruction does not supersede or nullify reporting requirements under other directives.

12.2.1.3. When a nuclear mishap or safety deficiency involves another safety area described in this instruction, submit separate reports.

12.2.1.4. When appropriate, report procedural deficiencies according to TO 00-5-1, *Air Force Technical Order System* using AFTO Form 22.

12.2.1.5. When appropriate, report materiel failures according to TOs 00-35D-54, *USAF Materiel Deficiency Reporting and Investigating System*, and 36-1-42, *Technical Manual--Policies Governing Warranty Procedures For Air Force Vehicles*.

12.2.1.6. Problems involving individuals under the Personnel Reliability Program (PRP) will be resolved according to AFI 36-2104, *Nuclear Weapons Personnel Reliability Program*. Report PRP problems in nuclear weapon system safety deficiency reports only when these problems are contributing factors to the deficiency.

12.2.1.7 Units that are organized and trained to transport, store, maintain, provide security for, or employ nuclear weapon systems must report any safety deficiency on items listed individually in Technical Order (TO) 00-110N-16, *USAF Nuclear-Certified Equipment and Software*, TO 21M-LGM30F-12-1, *Minuteman Nuclear Surety Procedures*, or TO 21-LG118A-2-1, *Peacekeeper Nuclear Surety Procedures*. All other units will report safety deficiencies involving these items when:

- Directed by HQ AFSC/SEW
- Directed by the MAJCOM
- The deficiency or situation could have an adverse affect on nuclear surety.

12.2.1.8. Report the physical loss or damage of a code component for any National Security Agency (NSA) product listed in TO 00-110N-16 to DIRNSA/V62, Ft George G. Meade MD 20755, according to AFI 33-212, *Reporting COMSEC Incidents*.

12.2.2. **General Reporting Procedures:**

12.2.2.1. Use the appropriate flagword when reporting nuclear weapon system mishaps and safety deficiencies (see paragraph 12.3) and nuclear reactor system or radiological mishaps and safety deficiencies (see paragraph 12.8).

12.2.2.2. If the event status changes after submitting the original report, submit another report using the new flagword. Upgrade the flagword only when time-critical responses are required. Do not downgrade a nuclear system mishap report without the concurrence of HQ AFSC/SEW because this would decrease the time-criticality of responses.

★12.3. Nuclear Weapon System Reporting Criteria:

12.3.1. NUCFLASH. A reporting flagword identifying a nuclear weapon system accident that could create the risk of war. This includes accidental, unauthorized, or unexplained events meeting any of the following criteria:

12.3.1.1. Accidental, unauthorized, or unexplained actual or possible nuclear detonation by US forces or US-supported allied forces.

12.3.1.2. Accidental or unauthorized launch of a nuclear-armed or nuclear-capable missile by US forces or US-supported allied forces.

12.3.1.3. Unauthorized flight or deviation from an approved flight plan by a nuclear-armed or nuclear-capable aircraft of US forces or US-supported allied forces which could be perceived as a hostile act.

12.3.2. BROKEN ARROW. A reporting flagword identifying a nuclear weapon system accident that could not create risk of war. This includes accidental, unauthorized, or unexplained events and the following:

12.3.2.1. Nuclear detonation of a nuclear weapon.

12.3.2.2. Nonnuclear detonation (no nuclear yield) or burning of a nuclear weapon, nuclear warhead, or nuclear component.

12.3.2.3. Radioactive contamination from a nuclear weapon or nuclear component.

12.3.2.4. Public hazard (actual or implied) from a nuclear weapon, nuclear warhead, or nuclear component.

12.3.3. EMPTY QUIVER. Loss, theft, seizure, or destruction of nuclear weapon or nuclear component. Loss includes, but is not limited to, intentional weapon jettisoning according to approved Air Force procedures or inadvertent release of a nuclear weapon or nuclear component.

12.3.4. BENT SPEAR. A reporting flagword identifying a nuclear weapon system incident. This includes mishaps not in the accident category but meeting any of the following criteria:

12.3.4.1. Radioactive contamination from burning, theft, seizure, or destruction of a radioactive limited life component.

12.3.4.2. Major damage to a nuclear weapon or nuclear component that requires rework, replacement, or examination or recertification by the Department of Energy (DOE). (Report minor damage as a nuclear weapon system safety deficiency.)

12.3.4.3. Events requiring immediate action in the interest of nuclear surety (such as render safety procedures or failed positive measures) or which could result in adverse national or international public reaction or premature release of information (such as attempted theft or seizure of a nuclear weapon). ***NOTE:*** Includes damage to a nuclear weapon carrier that could lead to loss of, or damage to, nuclear components.

12.3.4.4. Events indicating a nuclear weapon or nuclear warhead has been armed.

12.3.4.5. Events that could lead to a nuclear weapon system accident and thus warrant the informational interest of, or action by, any of the following agencies:

- Appropriate Military Department or Service.
- Office of the Assistant to the Secretary of Defense (Atomic Energy).
- Office of the Assistant Secretary of Defense (International Security Affairs).
- Office of the Assistant Secretary of Defense (Public Affairs).
- Federal Emergency Management Agency (within the CONUS).

12.3.5. DULL SWORD. A reporting flagword identifying a nuclear weapon system safety deficiency including events not in the accident or incident categories, but meeting any of the following criteria:

12.3.5.1. Weapons:

12.3.5.1.1. Minor damage to a nuclear weapon or nuclear component requiring rework, replacement, or examination and recertification by the DOE.

12.3.5.1.2. Exposure of a nuclear weapon or nuclear component to abnormal, severe, or unusual environments outside the normal stockpile-to-target sequence (e.g., flood, earthquake, or lightning).

12.3.5.1.3. Abnormal status of any indicator on a nuclear weapon.

12.3.5.1.4. Loss, theft, seizure, or destruction of a training weapon. ***NOTE:*** For defects or failures involving a training weapon (such as TYPE 3A/5A), request guidance from SA-ALC/NWTB, Kelly AFB TX 78241-5000 in a maintenance assistance request.
12.3.5.1.5. Minor damage to a nuclear weapon or nuclear component where the weapon is declared nonoperational according to nuclear weapon technical orders. ***NOTE:*** Includes weapons that remain operational, but require evaluation by the design agency.
12.3.5.1.6. Failure of a DOE-designed item to function as designed.
12.3.5.1.7. Defective DOE-designed items in the following categories:

- Weapons and Joint Test Assemblies
- Weapon components including limited life components and Group X kits
- Test and handling equipment
- Disablement equipment
- Permissive action link controllers
- Special tools and equipment
- Use control software

12.3.5.2. Weapon Systems (General):
12.3.5.2.1. Malfunction, failure, or anomaly involving the command and control system that results in indications (suspected, false, or actual) of critical function (release, launch, or arming) activation.
12.3.5.2.2. Malfunction, failure, or anomaly during operations or testing which did, or could, result in a safety or coded device to arm or be left in an unsafe condition.
12.3.5.2.3. Violations involving nuclear weapon system safety rules (published in AFI 91-100 series) or nuclear weapon system technical order procedures (e.g., weapon maintenance, loading, delivery, etc.).
12.3.5.2.4. Nuclear weapon system technical order procedure inadequacies or other problems which the unit perceives could lead to a violation of nuclear weapon system safety rules.
12.3.5.2.5. Tamper control (Two-Person Concept) violations of a no-lone zone permitting the opportunity to tamper with, or damage a nuclear weapon, weapon system, or certified component.
12.3.5.2.6. Tampering (actual or suspected), break-in (actual or attempted), or any security system malfunction/failure occurring during air logistical movement operations or at a nuclear weapon operational, maintenance, or storage facility. ***NOTE:*** Does not include false or nuisance alarms or security system failures which are properly reported and responded to.
12.3.5.2.7. Tamper detection violations involving safety-wired and sealed switches, covers, handles, or levers and Tamper Detection Indicators (TDIs) allowing access (actual or suspected) to a certified component. ***NOTE:*** Does not include instances where a known cause damaged a TDI and Two-Person Concept control was maintained or at least one of two TDIs used in a single location to protect a certified component remained undamaged.
12.3.5.3. Ground-Launched Missile Systems:
12.3.5.3.1. Loss or compromise (actual or suspected) of certified critical components listed in TO 21M-LGM30F-12-1, *Minuteman Nuclear Surety Procedures* or TO 21-LG118A-12-1, *Peacekeeper Nuclear Surety Procedures*. ***NOTE:*** Does not include momentary loss of Two-Person Concept control if the duration does not permit tampering with a certified critical component or removal of codes without detection.

- With the assistance of operations or maintenance personnel familiar with the circumstances of the event, conduct an investigation to determine if loss or compromise occurred.
- Identify follow-on actions required to recertify compromised critical components or to conduct a code change for a compromised code. NOTE: If recertification procedures are not provided in appropriate technical orders or doubt exists regarding what action to take, request guidance from HQ AFSC/SEW before submitting a DULL SWORD report.
- The wing commander has initial responsibility for determining if loss or compromise occurred and for taking appropriate action to protect the critical components or codes until follow-on actions are performed. HQ AFSC/SEW will determine if additional action is required.

12.3.5.3.2. Malfunction, failure, or anomaly involving equipment or software listed in TO 00-110-16 discovered during operations. ***NOTE:*** Does not include problems which are recognizable failure modes correctable with current technical orders.
12.3.5.4. Aircraft and Air-Launched Missile Systems:
12.3.5.4.1. Damage, malfunction, failure, or anomaly involving a nuclear certified aircraft's weapon suspension, release, or critical function monitoring system.
12.3.5.4.2. Malfunction, failure, or anomaly involving software listed in TO 00-110N-16 discovered during operations or testing.

12.3.5.4.3. Unplanned, unexpected, or inadvertent release, launch, or jettison of a training weapon or nonnuclear store from any nuclear-capable station of a nuclear certified aircraft.
12.3.5.4.4. Problems involving the positioning or securing of nuclear weapon loads on noncombat delivery vehicles (cargo aircraft) during air logistical operations. Specifically, consider unsafe conditions resulting from:

- Violations of, or inadequacies with, loading procedures.
- Defects or failures in the nuclear cargo restraint system.

12.3.5.4.5. Damage, malfunction, failure, or anomaly involving the missile's arming and control or propulsion system when mated with a nuclear warhead. ***NOTE:*** Does not include problems which are recognizable failure modes correctable with current technical orders.
12.3.5.5. Nuclear Certified Support and Test Equipment:
12.3.5.5.1. Damage, malfunction, failure, or anomaly involving noncombat delivery vehicles or support equipment listed in TO 00-110N-16 discovered during operations or inspections. ***NOTE:*** Does not include problems discovered during inspections which are recognizable failure modes correctable with current technical orders.
12.3.5.5.2. Specific areas of concern include the following:

- Stability, steering or brake system problems that affect the safe steering, stopping, towing, or holding in park of a tow or transport vehicle (cargo, loading, or lifting). ***NOTE***: Does not include minor problems such as dents, flat tires, corrosion, or electrical accessory malfunctions and failures resulting from fair wear and tear.
- Defects or failures in vehicle structural members (including the pintle hooks and mounting structure, fifth wheels) that support the load or transmit the towing or braking force.
- Inadequate restraint of loads attributed to trailer tiedown points or tiedown patterns.
- Unsafe condition or improper operation of the hydraulic, mechanical, and structural components of lift vehicles (e.g., forklifts and K-loaders) resulting in unresponsive operation, uncontrolled raising or lowering, or improper cargo restraint.
- Unsafe condition or improper operation of installed equipment lifting devices (e.g., overhead hoists, cranes, monorail hoist systems, and storage vaults) resulting in situations such as limit switch failure, over-speed operation, or uncontrolled raising or lowering operations.

12.3.5.5.3. Damage, malfunction, failure, or anomaly involving test equipment listed in TO 00-110N-16 discovered when verifying proper operation of critical function circuits or when directly interfaced with nuclear or operationally certified critical components.
12.3.5.6. Other Reportable Situations:
12.3.5.6.1. Frequent occurrences of a deficiency normally not reportable but having the potential to cause a nuclear mishap or safety deficiency.
12.3.5.6.2. Any problem or situation which, in the commander's judgment, adversely affects nuclear surety.

★12.4. Nuclear Weapon System Mishap and Safety Deficiency Reports:
12.4.1. **Reporting Schedules.** Nuclear safety reports (other than those using formal report forms described in chapter 5) are collectively licensed under RCS: HAF-SE(AR)9406. For MINIMIZE instructions, see paragraphs 4.6 and 12.4.1.3. File nuclear safety reports during declared or war emergency conditions (emergency status code C-2). The following criteria apply:

- Report nuclear weapon system mishaps according to table 12.2.
- Report nuclear weapon system safety deficiencies according to table 12.3.
- During MINIMIZE, send reports by first-class mail.

12.4.2. **Preparing Reports:**
12.4.2.1. PRELIMINARY. Submit a preliminary report when it is impossible to provide all required information before the reporting deadline. Furnish the missing information as soon as possible in supplemental reports or in a final report. Preliminary reports remain open until appropriate corrective action is taken or positively identified. ***NOTE:*** If safety deficiencies require evaluation by another agency (such as the weapon design agency or an Air Force item manager), the report will remain open until that agency's evaluation and concurrence to closed the report is received.
12.4.2.2. SUPPLEMENTAL. Submit a supplemental report to furnish additional information concerning any previous report.
12.4.2.3. ONE-TIME. Submit a one-time report when all required information is available and corrective action has either been taken or positively identified prior to the reporting deadline (e.g., failed item repaired at unit level, failed item sent to depot for repair, repetitive occurrences of a known failure, etc.).

12.4.2.4. FINAL. Submit a final report when all required information becomes available after the initial reporting deadline and corrective action has been taken or positively identified.
12.4.2.5. When preparing reports:

- Include items 1 through 4 (paragraphs 12.6.6, 12.6.7, 12.6.8, and 12.6.9) in all reports.
- For supplemental and final reports, use the date of the preliminary report.
- For supplemental reports, list other items as either "no change" or "not applicable" (as appropriate).
- Number each supplemental report using the original report control number, and include report control numbers for all other related reports (paragraph 12.6.14).
- Flag changes when any information in a particular report is changed from the previous report. For example, change "the maintenance team" to "the (new) periodic (end) maintenance team" to indicate a word was added.
- In the narrative (paragraph 12.6.11), add new information as subparagraphs to following reports, rather than changing previous information.
- Complete all items in the final report to make it a stand-alone document, repeating information included in earlier reports.
- For the narrative and corrective action, status, and recommendations entries, provide enough information to show the rationale used to establish closing actions.

12.4.2.6. For mishaps investigated by a Special Investigation Board (SIB):

- Include important findings of the investigation in the supplemental reports. Use the reports to keep addressees informed on the progress of the investigation and to advise them of unsafe conditions or materiel failures.
- Send supplemental reports for nuclear weapon system accidents at least until on-site investigations are completed.

12.4.2.7. Since a safety deficiency does not require a formal report, document all information relating to the event in the DULL SWORD report.
12.4.3. **Closing Reports.** Use the following guidance to close reports:
12.4.3.1. NUCFLASH, BROKEN ARROW, EMPTY QUIVER, and BENT SPEAR reports are closed upon approval of the formal report. ***NOTE:*** BENT SPEAR reports which do not require a formal report are closed in the same manner as DULL SWORD reports.
12.4.3.2. While one-time DULL SWORD reports are closed upon submission of the report, preliminary reports remain open until a final report is submitted. However, if relevant information becomes available after the report is closed, use the format in paragraph 12.8 to provide information in a supplemental report.
12.4.3.2.1. When other agencies provide corrective action for safety deficiencies, the originating organization should submit a final report to formally close the preliminary report.
12.4.3.2.2. HQ AFSC/SEW will provide a quarterly summary identifying the status of reports received during the period. For open reports where positive corrective action has been taken or defined, the MAJCOM or unit (through the MAJCOM) can administratively close these reports using a single message which identifies the reports to close and the associated corrective actions.

★12.5. Nuclear Weapon System OPREP-3 Reports. Prepare and submit OPREP-3 reports as prescribed by AFMAN 10-206 and JCS Pub 6-04.22. For nuclear weapon system accidents, incidents, and safety deficiencies send copies of the OPREP-3 reports to the addressees in table 12.1, as required by AFMAN 10-206. Do not include privileged information in OPREP-3 reports.

★12.6. Formatting for Nuclear Weapon System Mishap Reports. Prepare mishap reports according to the following format and instructions:
12.6.1. **From**: Message originator.
12.6.2. **To**: List addressees from table 12.1.
12.6.2.1. MAJCOMs may supplement this instruction to include as addressees any internal organizations with a need to know and may use AIGs to add addressees within the command as recipients of selected safety message reports. List the addressees in table 12.1 followed by the appropriate system AIGs, if any. Do not include addressees outside of MAJCOM AIG listings.
12.6.2.2. Send reports conveying significant safety information peculiar to the nuclear weapon system to other US Air Force MAJCOMs possessing like systems.
12.6.3. **Security Classification.** Use the proper security markings prescribed by AFI 31-401 for classified messages.
12.6.4. **Special Markings:**

- Place between the security classification and subject lines:

//
Insert figure 4.1 followed by:
//

NOTE: For classified messages, "FOR OFFICIAL USE ONLY" does not apply. Omit the quotation "FOR OFFICIAL USE ONLY."

12.6.5. **Subject and Control Number.** Use the subject line to identify the report control number. The report control number is the single common identifier and consists of the reporting unit designation, mishap flagword, two-digit fiscal year of occurrence, and reporting unit's sequence number.

12.6.5.1. The reporting unit assigns sequence numbers consecutively from 1 October to 30 September of each fiscal year for each flagword category (such as 888WG BROKEN ARROW 93-1). If an accident or incident occurs on 30 September and the report is prepared in October of the following fiscal year, number it according to the fiscal year of occurrence.

12.6.5.2. At the beginning of the report subject line, identify the report type (preliminary, supplemental, final, or one-time). Examples are PRELIMINARY 999WG BROKEN ARROW 90-1; SUPPLEMENTAL REPORT NO. 4, 999WG BENT SPEAR 92-2; or FINAL 999WG BENT SPEAR 91-3.

12.6.6. **Item 1.** Date and Time. Indicate when the mishap occurred or when it was discovered. Give the date, local time (24-hour clock), time zone, and weather conditions when applicable (e.g., 03 Mar 92, 1300, EST, foggy, winds SE at 6 mph).

12.6.7. **Item 2.** Location. Indicate where the mishap occurred or where it was discovered. If the event occurred or was discovered on a military installation, give the name of the installation, location or facility, and general function of the location or facility. If the event occurred off base, use street and highway references as well as the distance and compass direction from the nearest US military installation. During flight, give an approximate location.

12.6.8. **Item 3.** Material Involved:

12.6.8.1. Nuclear Weapon or Nuclear Component. For nuclear weapons, provide the standard nomenclature, modification number, and serial number for each weapon involved. If only a nuclear component is involved, provide the illustrated parts breakdown nomenclature, part number, and serial number for each item involved; the next major assembly to which each component is installed; and the nuclear weapon supported (e.g., CF1504 Cable Assembly, PN 123456-01, SN 1234, MC3681 Shape Component, B61).

12.6.8.2. Aircraft, Missiles, or Reentry Vehicles. Give the Mission-Design-Series (MDS) and serial number. For reentry vehicles, give the Mark (MK) number and the serial number. During aircraft or air vehicle flights give the mission identification number.

12.6.8.3. Ground Vehicles and Support Equipment (Including DOE-Provided Items), Test and Handling Equipment, and Other Nuclear Safety Certified Equipment Listed in TO 00-110N-16. Give the nomenclature, manufacturer, serial number, national stock number, part number, and TO page number (such as 40-ton trailer; Ramrod Ironworks; SN 42-23245; NSN 7100-01-345-6789; PN 20-1234; TO 00-110N-16, 15 Feb 89, C4, IMC 16, page 1-103).

12.6.8.4. Nuclear Logistic Movements. Provide the mission identification number for missions involving security deficiencies or aircraft flight mishaps.

12.6.8.5. Critical Components. Use TO 21M-LGM30F-12-1 or TO 21-LG118A-12-1 to obtain the information contained in the COMPONENT and OTHER DESIGNATION columns on each critical component.

12.6.9. **Item 4.** MAJCOM, Organization, and Base. Identify the owning organization for the material listed in Item 3 at the time of the event or its discovery. If the reporting organization is not the owning organization, identify each organization (such as ACC (Owning), 989EMS, 678WG Christy AFB MS; AMC (Reporting), 234WG/SE Wells AFB AL).

12.6.10. **Item 5.** Damage, Injury, and Cost Estimates. Describe all damage to US Air Force and non-US Air Force property and equipment, as well as any personnel injuries. Provide a detailed account and the best estimate available to allow a clear understanding of the extent of the mishap. Describe the disposition of items damaged, destroyed or malfunctioning, as applicable, for each report submitted. Summarize damage, injury, and cost in the final report. Paragraph 2.4 covers determination of mishap costs.

12.6.11. **Item 6.** Narrative. Identify the problem and provide pertinent facts.

12.6.11.1. Describe the operation being performed at the time of occurrence or discovery or the circumstances leading to the mishap. Include enough information to provide a complete and clear understanding of the sequence of events and circumstances, degree of damage, etc. (See paragraph 3.12). If applicable, include information on personnel involved, equipment in use, weather conditions, type of activity the operation was supporting, and technical order references. Include ranks and AFSCs if required for clarity but do not identify personnel by name.

12.6.11.2. State if the conclusions are probable or confirmed, and give enough information to form a clear picture of all probable or confirmed causes. Include in the supplemental and final reports any information not available when the preliminary report was prepared.
12.6.11.3. Provide the work unit codes (WUC), when available and applicable, of the item with the damage, malfunction, or failure (such as weapon, vehicle, support equipment, or critical component). Do not provide the WUC of the task being performed except for special inspections. Use the appropriate WUCs found in technical orders or other publications to submit the following information:

- Work unit.
- Action taken.
- When discovered.
- How malfunctioned.

12.6.12. **Item 7.** Findings and Causes. Record the opinions of the SIB or investigating officer, but do not repeat the narrative. (Paragraphs 3.14 and 3.15 describe findings, cause determination, and cause methodology.)
12.6.13. **Item 8.** Actions Taken or Recommended. Describe any actions taken or recommended, and give the rationale for those actions. When appropriate, include corrective actions for personnel errors such as retraining or recertification. Do not include disciplinary actions.
12.6.14. **Item 9.** Other Reports or Notifications Submitted. Identify the type of report and the unit-assigned number of related reports submitted separately.
12.6.14.1. List the date-time group of OPREP-3 messages.
12.6.14.2. List any other message or written reports submitted on this event.
12.6.14.3. If non-US Air Force agencies were notified, briefly give the reason for notification, who was notified, how they were notified, and date and time of notification.
12.6.14.4. Provide details if a news release was or will be made on the event.
12.6.15. **Item 10.** Photographs.
12.6.15.1. Provide a list of organizations receiving photographs.
12.6.15.2. Submit photographs of nuclear weapons or nuclear components according to specific guidance and forwarding instructions provided in TO 11N-5-1, *Unsatisfactory Reports*. Photographs required for evaluation of Air Force designed components will be requested by the evaluation agency on an as needed basis. Do not refer to the unit on the photographs.
12.6.16. **Item 11.** Additional Information. Include any additional information providing insight into the event not required by another item.
12.6.17. **Item 12.** Point of Contact. Give the name, grade, title or position, and telephone number of a knowledgeable point of contact. Ensure the individual, who may also be the report preparer, has immediate access to local records used in preparing the report.
12.6.18. **Item 13.** Report Preparer and Approver. Give the name, grade, title or position, and telephone number of the person submitting the report and the person who approved it for release.

★**12.7. Formatting for Nuclear Weapon System Mishap Formal Reports.** Submit the required AF Form 711-series reports for nuclear weapon system mishaps according to the following format and instructions:
12.7.1. **Format.** Prepare formal reports according to chapters 3 and 5, and this paragraph. Use continuation pages, if needed.
12.7.2. **Addressees.** Send the reports to the addressees listed in table 12.1.
12.7.3. **Special Markings.** Use the following markings on formal reports:
12.7.3.1. Mark each unclassified page in Part II with figure 4.1.
12.7.3.2. Omit the "FOR OFFICIAL USE ONLY" marking on classified pages, but show the limited-use report markings and the proper classification markings prescribed by AFI 31-401.
12.7.3.3. Display figure 4.1 and the following statement on the front cover of the formal report:

COPYING OR RELEASING ANY PORTION OF THIS REPORT IS PROHIBITED WITHOUT THE EXPRESS WRITTEN PERMISSION OF HQ AFSC/SEW.

12.7.4. **Reporting Schedules.** Prepare formal reports for nuclear weapon system mishaps according to table 12.2.
12.7.5. **AF Form 711, USAF Mishap Report.** Prepare this form according to instructions in chapter 5.
12.7.6. **AF Form 711F, USAF Nuclear Accident/Incident Report.** Prepare this form according to the following instructions:
12.7.6.1. Item 1. Material Involved:

12.7.6.1.1. Item 1a. War Reserve Bomb, Warhead, or Component. For nuclear weapons, provide the standard nomenclature, modification number, and serial number for each weapon involved. If only a nuclear component is involved, provide the illustrated parts breakdown nomenclature, part number, and serial number of the item involved; the next major assembly to which the component is installed; and the nuclear weapon supported (such as CF1504 Cable Assembly, PN 123456-01, SN 1234, MC3681 Shape Component, B61).
12.7.6.1.2. Item 1b. Training Items. Self-explanatory.
12.7.6.1.3. Item 1c. Support, Test, and Handling Equipment. For support, test, handling, and other nuclear safety certified equipment listed in TO 00-110N-16, give the national stock number, part number, serial number (if applicable), and manufacturer's name.
12.7.6.1.4. Item 1d. Carrier. For an aircraft or missile, give the MDS and serial number. During aircraft and missile flights, give the mission identification number; for ground vehicles, give the nomenclature and serial number; and for reentry vehicles, give the Mark (MK) number and serial number.
12.7.6.2. Item 2. Type of Operation. Check the box reflecting the operation in progress at the time of the mishap or its discovery. Provide a full description if "other" is checked.
12.7.6.3. Item 3. Damage. Describe the damage to the item and provide photographs, if possible.
12.7.6.4. Item 4. Nuclear Material Information:
12.7.6.4.1. Type and Extent of Contamination, Measured Intensities, Rate of Decay, and Decontamination Procedures Established. Separate this portion of the report into sections, and discuss each factor individually.
12.7.6.4.2. Disposition of Nuclear Material Involved. Indicate shipping destination or when it was disposed of (if unknown, so state) and give any other actions taken or planned.
12.7.6.5. Item 5. Aircraft, Missile, or System Information. Describe the aircraft, missile, or system (as appropriate) configuration at the time of the event or its discovery. For aircraft weapon systems, include the position of all weapon-related switches.
12.7.6.6. Item 6. Miscellaneous Information:
12.7.6.6.1. Provide details if a fire occurred.
12.7.6.6.2. Provide details if the nuclear weapon's high explosive detonated.
12.7.6.6.3. Include information on any component for which a materiel deficiency report was submitted according to TO 00-35D-54 (include the report control number).
12.7.6.6.4. Give the technical order number, title, date, pages, and step numbers if technical order noncompliance occurred.
12.7.6.7. Item 7. Accident-Related Factors. Provide factors related to the accident, and include the findings and causes discussed in paragraphs 3.14 and 3.15.
12.7.6.8. Item 8. Comments. Use this paragraph for comments on the accident or incident, and ensure the comments are other than those included in Item 11 of the basic AF Form 711. Include immediate, intermediate, continuing, or long-range corrective actions and the "get well" date in Item 11 of the basic form. Give the status of individuals under the Personnel Reliability Program and the positions they occupy (critical or controlled).
12.7.7. **AF Form 711-Series.** Submit other forms in the 711-series as required by chapter 5 of this instruction.

★**12.8. Formatting for Nuclear Weapon System Safety Deficiency Reports:** Prepare DULL SWORD report according to the format in figure 12.1:
12.8.1. MAJCOMs may supplement this instruction to include as addressees any internal organizations with a need to know and may use AIGs to add addressees within the command as recipients of selected safety message reports. List the addressees in table 12.1 followed by the appropriate system AIGs, if any. Do not include addressees outside of MAJCOM AIG listings.
12.8.2. Send reports conveying significant safety information peculiar to the nuclear weapon system to other US Air Force MAJCOMs possessing like systems.

★**Figure 12.1. Sample Dull Sword Message.**

From: Message originator.

To: List addressees from table 12.1.

Security Classification. Use the proper security markings prescribed by AFI 31-401 for classified messages.

Special Markings. Insert the following statement:

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FOR OFFICIAL USE ONLY
THIS REPORT CONTAINS PRIVILEGED, LIMITED-USE SAFETY INFORMATION.
UNAUTHORIZED USE OR DISCLOSURE CAN SUBJECT YOU TO CRIMINAL PROSECUTION, TERMINATION OF EMPLOYMENT, CIVIL LIABILITY, OR OTHER ADVERSE ACTIONS. SEE AFI 91-204, CHAPTER 1 FOR RESTRICTIONS.

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NOTE: If a security classification is used, "FOR OFFICIAL USE ONLY" does not apply. Omit the quotation "FOR OFFICIAL USE ONLY."

SUBJECT: REPORT TYPE, REPORTING UNIT DESIGNATION, FLAGWORD, TWO-DIGIT FISCAL YEAR OF OCCURRENCE, AND REPORTING UNIT'S SEQUENCE NUMBER.

Figure 12.1. Continued.

NOTE: The reporting unit assigns sequence numbers consecutively from 1 October to 30 September of each fiscal year for each flagword category. If the deficiency occurs on 30 September and the report is prepared in October of the following fiscal year, number it according to the fiscal year of occurrence. Report all voided and unused DULL SWORD numbers to HQ AFSC/SEW as soon as possible.

Examples: PRELIMINARY 509 BW DULL SWORD 96-001
SUPPLEMENTAL REPORT NO. 1, 5 BW DULL SWORD 96-008
FINAL 5 BW DULL SWORD 96-008
ONE-TIME 509 BW DULL SWORD 96-010

Item 1. DATE, TIME, LOCATION: Include the date, time, and location of the event.

Example: 5 Mar 96; 0615 CST; Parking Stub B-5, Main Parking Area, Minot AFB, ND.

Item 2. MATERIAL INVOLVED: Include the nomenclature, national stock number (NSN), manufacturer (MFR), part number (P/N), serial number (S/N), and next higher assembly (NHA). If applicable, provide the Mission-Design-Series (MDS) and serial number.

Example: LAUNCHER, AIRCRAFT GUIDED MISSILE AND BOMB (CSRL); NSN: 1195-01-238-7385; P/N: 405-10003-510; S/N: 048; MFR: THE BOEING CO; MDS: B-52H; S/N: 60-026.

Item 3. NARRATIVE: Provide a detailed description of the chronological events and circumstances leading to the deficiency, including specific causes and damages. If applicable, include information on personnel involved, equipment in use, weather conditions, type of activity the operation was supporting, and technical order references. While ranks and Air Force specialty codes may be provided for clarity, do not identify personnel by name. Provide the work unit codes (WUC) of the item with damage, malfunction or failure. Do not provide the WUC of the task being performed except for special inspections. Use WUCs to submit work unit, action taken, when discovered, and how malfunctioned. Use the CATEGORY-AGENT-REASON (CAR) methodology to specify selections for accountable area (what), responsible agent (who), and reason (why). (MAINTENANCE -- PERSON, SQDN, LGW -- COMPLACENCY)

Item 4. CORRECTIVE ACTIONS, STATUS, RECOMMENDATIONS: Include specific actions identified to correct the problem and if the actions were completed. Give rationale for those actions. Indicate if the situation is closed or remains open pending further action. When appropriate, provide recommended actions such as retraining or recertification, but do not include disciplinary actions.

Item 5. ADDITIONAL INFORMATION: Include significant information not already required which provides insight into the event. Identify any other reports submitted that relate to the event (e.g., previous DULL SWORD reports, product quality deficiency reports, etc.). Submit photographs of nuclear weapons or nuclear components according to specific guidance and forwarding instructions provided in TO 11N-5-1. Photographs for Air Force items will be requested by the evaluation agency on an as needed basis. Do not refer to the unit on the photographs.

Item 6. POINT OF CONTACT, REPORT PREPARER, REPORT APPROVER: Identify the individual to be contacted for technical assistance. Also identify the report preparer as well as the releasing official. Include names, ranks, duty titles, and phone numbers.

★12.9. Nuclear Reactor System and Radiological Reporting Criteria:

12.9.1. PINNACLE/FADED GIANT. A nuclear reactor system or radiological accident as defined by the following criteria:

12.9.1.1. Nuclear criticality or event resulting in significant damage to the reactor core or a significant release of fission products from the reactor core.

12.9.1.2. Release of radioactive material such that, had an individual been present for 24 hours, the individual could have received an intake five times the federal annual occupational limit.

12.9.1.3. Exposure of an individual's whole body to 25 roentgen equivalent man (rem) or more of radiation; exposure of the eye to 75 rems or more of radiation; or exposure of the skin, feet, ankles, hands, or forearms to 250 rems or more of radiation.
12.9.2. BEELINE/FADED GIANT. A nuclear reactor system or radiological incident as defined by the following criteria:
12.9.2.1. Events or acts caused by humans or nature (e.g., fire, explosion, projectile impact, sabotage, earthquake, flood, tornado, hurricane, or riot) damaging a nuclear reactor system.
12.9.2.2. Exposure of an individual's whole body to 5 rems or more of radiation; exposure of the eye to 15 rems or more of radiation; or exposure of the skin, feet, ankles, hands, or forearms to 50 rems or more of radiation.
12.9.2.3. Release of radioactive material so that, had an individual been present for 24 hours, the individual could have received an intake in excess of the federal annual occupational limit.
12.9.3. MISSING PENNY. A deviation from prescribed safety and security standards for a nuclear reactor system or radiological activity as defined by the following criteria:
12.9.3.1. Radiological Events:
12.9.3.1.1. Release of radioactive material posing a threat to life, health, or property.
12.9.3.1.2. Uncontrolled release of radioactivity to radiologically unrestricted areas above the allowable limits specified in Title 10, *Code of Federal Regulations*, part 20 (10 CFR 20).
12.9.3.1.3. Exposure of any individual exceeding one occupational dose limit.
12.9.3.2. Nuclear reactor system events:
12.9.3.2.1. Violation of safety limits (as identified in technical specifications) not resulting in an accident or incident.
12.9.3.2.2. Abnormal degradation in reactor fuel, fuel cladding, coolant boundary, or containment boundary resulting in a measurable release of radioactive material.
12.9.3.2.3. Operation with any safety system setting less conservative than specified in the technical specifications. This includes the limiting safety system settings (LSSS) and the reactor protective system (RPS) settings.
12.9.3.2.4. Automatic or manual actuation of a reactor shutdown (SCRAM) as a result of exceeding the LSSS or RPS settings or the actuation of an engineered safety feature relating to the safety of the public, operating personnel, or facility.
12.9.3.2.5. Operation in violation of any limiting condition for operation (as specified in the technical specifications).
12.9.3.2.6. Malfunction of a reactor, experiment, or experimental facility safety system component which could or does render a required safety system (as identified in the technical specifications) incapable of performing its intended safety function. Do not report a malfunction discovered during normal surveillance tests or checks.
12.9.3.2.7. Unanticipated or uncontrolled change in reactivity greater than $1.00 (one dollar).
12.9.3.2.8. Condition which could or did result in operating the reactor in a manner less safe than conditions analyzed in the facility safety analysis report.
12.9.3.2.9. Inadequate implementation of administrative or procedural controls which could create a credible possibility of an unsafe condition with regard to reactor operations.
12.9.3.2.10. Event or condition (internal or external) posing a threat to the safety of the nuclear reactor or significantly hampering the ability of a facility personnel to perform duties required for the safety operation of the reactor.

★12.10. Nuclear Reactor System and Radiological Mishap Reports:
12.10.1. **Reporting Schedules.** Report nuclear reactor system and radiological mishaps according to table 12.5.
12.10.2. **Preparing Reports.** Prepare these reports according to the following guidance:
12.10.2.1. Include the original report control number in the subject line of supplemental and final reports. Number supplemental reports sequentially (Supplemental Report 1, Supplemental Report 2, etc.).
12.10.2.2. Include items 1 through 4 from paragraph 12.11 in all nuclear reactor system and radiological mishap reports to facilitate recording and correlating data. List other items as either "no change" or "not applicable" (as appropriate) in the supplemental, and final reports.
12.10.2.3. Include the name, rank, organization, SIB position, and full official mailing address of each primary member in the first supplemental report for a mishap involving an SIB.
12.10.2.4. Include important findings of the investigation in the supplemental reports. Use the reports to keep addressees informed on the progress of the investigation and to advise them of any unsafe conditions or materiel failures.
12.10.2.5. As a minimum, send for nuclear reactor system and radiological supplemental reports until all on-site investigations are completed.
12.10.2.6. Use the same principles for writing the narrative portion of the final report as for the formal report (see chapters 3 and 5 for guidance).
12.10.2.7. Provide a final report unless the initial report was a one-time report.

★**12.11. Nuclear Reactor System and Radiological OPREP-3 Reports.** Prepare and submit OPREP-3 reports as prescribed by AFMAN 10-206 and JCS Pub 1-03.6. Send copies of the OPREP-3 reports to the addressees listed in table 12.4, as required by AFMAN 10-206. Do not include privileged information in OPREP-3 reports.

12.12. Formatting for Nuclear Reactor System and Radiological Mishap Reports. Use the following format and instructions to prepare a nuclear reactor system or radiological report:
12.12.1. **From:** Message originator.
12.12.2. **To:** List the addressees in table 12.4, followed by the appropriate system AIGs, if any.
12.12.2.1. MAJCOMs may supplement this instruction to include as addressees any internal organizations with a need to know and may use AIGs to include addressees (within the command only) as recipients of selected messages.
12.12.2.2. MAJCOMs may send reports conveying significant safety information peculiar to the system to MAJCOMs possessing like systems.
12.12.3. **Security Classification.** For classified messages, use the security markings prescribed by AFI 31-401.
12.12.4. **Special Markings:**

Place between the security classification and subject lines:
//
Insert figure 4.1 followed by:
//
NOTE: For classified messages, "FOR OFFICIAL USE ONLY" does not apply. Omit the quotation "FOR OFFICIAL USE ONLY."

12.12.5. **Subject and Control Number.** Show the report control number in the subject line. Ensure this number, which becomes the single common identifier of the event, includes the following: type of message and reporting flagword (e.g., Supplemental Report 1, FADED GIANT); year, month, and day of mishap using six digits (e.g., 89-02-20); unit (e.g., SM-ALC); and unit report number (e.g., -1). Include the report control number specified in the preliminary report (with the type of message updated) in the subject line of all supplemental and final reports.
12.12.6. **Item 1.** Date and Time. State when the event occurred or when it was discovered. Give the date, local time (24-hour clock), time zone, and weather conditions when applicable (such as 03 Mar 89, 1300, EST, foggy, winds SE at 6 mph).
12.12.7. **Item 2.** Location. State where the event occurred or where it was discovered. For nuclear reactor systems, include the name of the reactor facility and the unit number (for multiple reactor unit sites).
12.12.8. **Item 3.** Identification of System or Components Involved. Use a short title which identifies the type of nuclear reactor or radiological system or component involved, or briefly describe the event.
12.12.9. **Item 4.** MAJCOM, Organization, and Base. Identify who possessed the nuclear reactor system or radiological material at the time of the event or its discovery. Specify by MAJCOM; subordinate command or numbered air force; wing, group, squadron, or unit; and base name and code. If different organizations were involved, identify each with the material they possessed. Use the same format to identify the organization submitting the safety report if the reporting organization is not the supporting organization.
12.12.10. **Item 5.** List of Personnel Directly Involved. Identify all military members or federal civilian employees involved in the event, non-US Air Force individuals whose actions or inaction resulted in damage to US Air Force property or injury to US Air Force personnel, and all persons injured. Begin the list with the individual most directly involved. Identify USA or USN personnel assigned to the US Air Force as belonging to the USA or USN and identify civilian employees by their employment agency or department (Civ-USAF, Civ-USA, Civ-FAA, etc.). List each individual's name (last name, first name, and middle initial); military or civilian grade; social security account number; duty title and AFSC; degree of injury (N-none, TT-temporary total, PP-permanent partial, PT-permanent total, F-fatal, or M-missing); and lost workdays lost due to injury.
12.12.11. **Item 6.** Damage, Injury, and Cost Estimates. Describe briefly all damage to US Air Force and non-USAF property and equipment, as well as any personnel injuries. Enter the best estimate available, and update in later reports as required.
12.12.11.1. If nuclear material was involved, describe the type and extent of any contamination, measured intensities, rate of decay, decontamination procedures established, security and disposition of the nuclear material, and the extent of personnel exposure to radiation or radioactive material.
12.12.11.2. Include the status of required medical and security assistance, when appropriate.
12.12.11.3. Describe the disposition of items damaged, destroyed, or malfunctioning.

12.12.11.4. In the final report, summarize damages, injuries, and costs at the close of the investigation (see paragraph 2.4 to determine mishap costs).
12.12.12. **Item 7.** Factual Information.
12.12.12.1. Refer to the paragraph from this chapter under which the report is being submitted.
12.12.12.2. Describe the type of operation being performed at the time of occurrence or discovery. Include the name of the technical order or procedure being used and the paragraph number, if applicable.
12.12.12.3. For nuclear reactor systems, describe the system operating parameters and circumstances leading to the event. Include the following information.
12.12.12.3.1. Operating mode (as defined in the technical specifications) at the time of the event.
12.12.12.3.2. Percent of permitted thermal power at which the reactor was operating when the event occurred.
12.12.12.4. For a design deficiency or material failure, malfunction, or damage, use the appropriate work unit codes (provide each code and a brief clear-text meaning to prevent confusion if code letters are garbled in transmission) found in technical orders or other publications to submit the following information:

- Work unit.
- Action taken.
- When discovered.
- How malfunctioned.

12.12.13. **Item 8.** Summary of Circumstances. Use the following general guidance to summarize the sequence of events.
12.12.13.1. Present the summary chronologically, starting with the earliest related point and continuing until the time of occurrence.
12.12.13.2. Write the summary so it provides an understanding of the event without referring to the rest of the report or other documents. Record facts, conditions, and circumstances just as the investigators discovered them.
12.12.13.3. Tell how, but not necessarily why, the event occurred. Do not discuss the importance of facts or how these facts relate to conclusions drawn from the investigation.
12.12.13.4. Use technical order references to clarify ambiguities.
12.12.13.5. Define abbreviations.
12.12.13.6. Add the following information to the summary of circumstances:
12.12.13.6.1. When appropriate, describe weather conditions and the type of lighting. For all involved individuals, include their certification dates (if certification is required), descriptions of experience, and the dates they last performed similar operations. Describe workload schedules and furnish a list of supervisory personnel who were present.
12.12.13.6.2. Describe the operation being performed or any other related details experienced when the event occurred or was discovered.
12.12.13.6.3. Describe how and when the event was detected.
12.12.13.6.4. For nuclear reactor systems, identify reactor protection system and operator actions taken to control the situation.
12.12.13.6.5. Describe the extent and nature of any fire or explosion.
12.12.14. **Item 9.** Other Reports or Notifications Submitted. Provide the type of report and the unit-assigned number of related reports submitted separately.
12.12.14.1. List the date-time group of any OPREP-3 messages.
12.12.14.2. Give all materiel deficiency report control numbers according to TO 00-35D-54.
12.12.14.3. Give reference numbers for AFTO Form 22 reports, as well as any other applicable reports.
12.12.14.4. If agencies outside the USAF were notified, briefly describe the reason for notification, who was notified, how they were notified, and date and time of notification.
12.12.14.5. Provide details if a news release was or will be made.
12.12.15. **Item 10.** Technical and Engineering Evaluations of Material by DoD Agencies. Summarize any technical and engineering evaluations of material by DoD agencies.
12.12.16. **Item 11.** SIB. List the SIB members or investigating officer by name (last name, first name, and middle initial), military or civilian grade, duty title and AFSC, organization, and SIB position. Include a full official mailing address for each primary member.
12.12.17. **Item 12.** Diagrams. Provide a list of any diagrams supplied to other organizations, and give their status (e.g., date drawn, date mailed, and recipients).
12.12.18. **Item 13.** Photographs. Provide a list of any photographs sent to other organizations, and give their status (e.g., date photographed, date mailed, and recipients).
12.12.19. **Item 14.** Investigation, Analysis, Findings, Causes, and Recommendations. Draw on the rest of the report to form a complete picture of the event. Preliminary reports may give a best initial judgment of the causes. Final reports shall

contain a thorough analysis of all evidence, and then provide the findings, causes, and recommendations. Record the opinions of the SIB members or investigating officer in this section, and ensure either acceptance or rejection of all evidence in the report, including fatigue or stress factors. Identify and describe all causes according to paragraphs 3.12 through 3.15. Except in the case of a formal minority report from the SIB, avoid any conflicting findings, causes, or recommendations. (Refer to chapter 3 for more details on this part of the report.)

12.12.19.1. Analyze the occurrence for safety implications, and then include the following information (as applicable) in the analysis of effects and consequences.

12.12.19.1.1. For nuclear reactor systems, maximum and minimum operating conditions and parameters during temporary fluctuations, equipment malfunction, and operator error.

12.12.19.1.2. Damage to systems, components, and structures.

12.12.19.1.3. Personnel injuries and exposures.

12.12.19.1.4. Quantity and composition of radioactive materials released (existing background levels and release levels).

12.12.19.1.5. Consequences (actual or potential) on public health and safety.

12.12.19.2. Recommended Corrective Action. Discuss any proposed corrective action to prevent recurrence.

12.12.19.3. Failure Data. Determine if equipment failure started the event or if the equipment failed as a result of the accident, incident, or safety deficiency. Next, provide a record of the previous failures and malfunctions of the affected systems and components or similar equipment. Identify the equipment or components (e.g., component manufacturer and name plate data).

12.12.20. **Item 15.** Action Taken. List any actions taken to remedy the malfunction, damage, or error; to provide safety and security; and to prevent recurrence.

12.12.21. **Item 16.** Additional Information. Provide any pertinent information on materiel deficiency reports or service reports and other reports required by this instruction.

12.12.22. **Item 17.** Report Preparer. Give the name, grade, title or position, and telephone number of the person submitting the report.

★**12.13. Formatting for Nuclear Reactor System and Radiological Mishap Formal Reports.** Submit formal reports according to this instruction for nuclear reactor system and radiological accidents and incidents, unless directed otherwise by HQ AFSC/SEW. Formal reports on radiological events shall be jointly reviewed by HQ AFSC/SEW and the USAF Radioisotope Committee. Prepare this report according to the following format and instructions:

12.13.1. **Format.** Prepare formal reports according to chapters 3 and 5 and these instructions. Use continuation pages, if needed.

12.13.2. **Addressees.** Send the reports to the addressees in table 12.4.

12.13.3. **Special Markings.** Annotate formal reports as follows:

12.13.3.1. Do not stamp unclassified pages in Part I with markings indicating special handling requirements or identifying them as "FOR OFFICIAL USE ONLY."

12.13.3.2. Mark the covers of two-part, limited-use formal reports with figure 4.1 and add the following:

COPYING OR RELEASING ANY PORTION OF THIS REPORT IS PROHIBITED WITHOUT THE EXPRESS WRITTEN PERMISSION OF HQ AFSC/SEW.

12.13.3.3. Mark each unclassified page of Part II of formal reports with figure 4.1.

12.13.3.4. Omit the "FOR OFFICIAL USE ONLY" marking on classified pages, but show limited-use report markings and the markings prescribed by AFI 31-401.

12.13.3.5. Place figure 4.1 on the front cover of all formal reports and add the following below the figure:

COPYING OR RELEASING ANY PORTION OF THIS REPORT IS PROHIBITED WITHOUT THE EXPRESS WRITTEN PERMISSION OF HQ AFSC/SEW.

12.13.4. **Reporting Schedules.** Prepare formal reports for reactor and radiological accidents and incidents according to table 12.5.

12.13.5. **Submit AF Form 711, USAF Mishap Report**, according to chapter 5 of this instruction.

12.13.6. **Report Preparation.** Prepare the report on plain white paper, using the title "Nuclear Reactor System (or Radiological) Accident/Incident Report." Provide an adequate level of detail by including or condensing all information provided in message reports. Where appropriate, include the photographs referenced in message reports. Prepare the report according to the following instructions.

12.13.6.1. Item 1. Reactor, Device, or Material involved.

12.13.6.1.1. Item 1a. Reactor. If the event occurred at a reactor facility, identify the reactor by name, location, and unit (if a multiple reactor unit site). Maintain identification consistency with any previous FADED GIANT reports.
12.13.6.1.2. Item 1b. Device. If the mishap involved a nuclear power source or other device, identify by type, model, and serial number. Maintain identification consistency with any previous FADED GIANT reports.
12.13.6.1.3. Item 1c. Material. Identify the type and quantity of radioactive material involved.
12.13.6.2. Item 2. Type of Operation. Provide a brief description (one or two sentences) of the operation in process at the time of the event. For nuclear reactor systems, include the operating mode (as defined in the technical specifications) and the percent of permitted thermal power at which the reactor was operating.
12.13.6.3. Item 3. Nuclear Material Information:
12.13.6.3.1. Item 3a. Provide information on the type and extent of contamination, measured intensities, rate of decay, and established decontamination procedures. Discuss these factors individually in separate subparagraphs. When several radioactive species with different radiological significance are involved, list and describe each of the species separately.
12.13.6.3.2. Item 3b. Provide historical background and normal operating levels for each of the radioactive species addressed in item 3a.
12.13.6.3.3. Item 3c. Describe the disposition of contaminated material.
12.13.6.4. Item 4. Related Factors. Include the findings and causes discussed in paragraphs 3.12 through 3.15. Identify any component involved in the event.
12.13.6.5. Item 5. Comments. Use this paragraph to provide comments. Ensure the comments do not include those in Item 11 of the basic AF Form 711. Include immediate, intermediate, continuing, or long-range corrective action and the estimated completion date in Item 11 of the basic form.
12.13.7. **AF Form 711-Series.** Submit other forms in the 711-series as required by chapter 5 of this instruction.

★**12.14. Nuclear Reactor System and Radiological Safety Deficiency Reports.** Do not include privileged information in the safety deficiency reports or mark them as limited-use reports. Prepare and submit MISSING PENNY reports according to table 12.6.

★**12.15. Formatting for Nuclear Reactor System and Radiological Safety Deficiency Reports.** Use the following format and instructions to prepare nuclear reactor system and radiological safety deficiency reports.
12.15.1. **Addressees.** Refer to table 12.4 for the list of report addressees.
12.15.2. **Format.** Prepare the nuclear reactor system or radiological safety deficiency report on plain white paper as follows:
12.15.2.1. Item 1. Title. Use the title "MISSING PENNY Report."
12.15.2.2. Item 2. Report Number. Sequentially assign an event number (begin with 001 for each fiscal year and for each reactor unit).
12.15.2.3. Item 3. Dates:
12.15.2.3.1. Item 3a. Report Date. Show the date in abbreviated form (e.g., 20 Jan 89).
12.15.2.3.2. Item 3b. Occurrence Date. Show the date in abbreviated form (e.g., 20 Jan 89).
12.15.2.4. Item 4. Location:
12.15.2.4.1. Item 4a. Base. Identify the installation where the MISSING PENNY occurred.
12.15.2.4.2. Item 4b. Facility. Give the name of the organization for radiological events or the name of the reactor facility including unit number at multiple reactor unit sites for nuclear reactor system events.
12.15.2.5. Item 5. Operation. Describe the operations underway at the time of the safety deficiency. For nuclear reactor systems, give the operating mode (as defined in the technical specifications) at the time of the event.
12.15.2.6. Item 6. Power Level. For nuclear reactor system safety deficiencies, give the percent of permitted thermal power at which the reactor was operating when the event occurred. This item is not applicable to radiological safety deficiencies.
12.15.2.7. Item 7. Causes. Identify all the causes of the MISSING PENNY using paragraphs 3.14 and 3.15 of this instruction.
12.15.2.8. Item 8. Abstract. Provide a brief description of major occurrences during the event. Include all actual component or system failures, all relevant operational errors or procedural violations, and any significant corrective action taken or planned as a result of the event.
12.15.2.9. Item 9. Release Levels. Give the recorded levels of release for radionuclides exceeding permissible limits.
12.15.2.10. Item 10. Historical Background and Normal Operating Levels. Provide historical background of radionuclides. These levels are determined by environmental radiological monitoring prior to operating the nuclear reactor. For nuclear reactor systems, provide normal operating levels of radiation in the vicinity of the event.

12.15.2.11. Item 11. Component Identification. Identify the component and manufacturer, if known, for those components contributing to the event.
12.15.2.12. Item 12. Text. Provide enough detail for readers familiar with handling radioactive materials or the design of nuclear reactors to understand what occurred (causes of the event, reactor status (when applicable) before the event and sequence of occurrences during the event)). Explain how systems, components, and personnel performed, but do not address specific hardware problems in excessive detail (paragraphs 3.12 and 3.13). Describe unique characteristics of the facility or operation influencing the event, either favorably or unfavorably. Describe the event from the perspective of those involved (e.g., in the case of a reactor operator: what the operator saw, did, and understood or misunderstood).

★**Table 12.1. Addressees for Nuclear Weapon System Reports (see note 1).**

	A	B	C	D
	Organization	Office	Reports	Remarks
1	HQ AFSC KIRTLAND AFB NM	CC SEW	NUCFLASH, BROKEN ARROW,	OPREP-3 addressee
2	HQ USAF WASHINGTON DC	SEI/LGMW	EMPTY QUIVER, BENT SPEAR,	
3	WPNS DIR KELLY AFB TX	NWTB	DULL SWORD	
4	HQ AFMC WRIGHT-PATTERSON AFB OH	SEW/DRW		
5	SA-ALC KIRTLAND AFB NM	NWI		
6	MAJCOM or command concerned	as required		
7	Numbered Air Force or intermediate command	as required		
8	USSTRATCOM OFFUTT AFB NE	J443		
9	AFSPA KIRTLAND AFB NM	SPO		OPREP-3 addressee Security-related reports only
10	HQ AFMOA BOLLING AFB DC	SGPA	NUCFLASH, BROKEN ARROW	OPREP 3 addressee
11	System Program Director Air Logistics/Product Center(see TO 00-25-115)	as required (see note 2)	DULL SWORD	Materiel failure / malfunction / damage and TO deficiency related reports only
12	Item Manager Air Logistics Center OC-ALC TINKER AFB OK OO-ALC HILL AFB UT SA-ALC KELLY AFB TX SM-ALC MCCLELLAN AFB CA WR-ALC ROBINS AFB GA	as required (see note 2) SEW/LARM SEW/LF-S SEW/LACS SEW/LAFS SEW/SEM		Materiel failure / malfunction / damage and TO deficiency related reports involving general-use support equipment (not FSG 11 or NOCM) only
13	OO-ALC HILL AFB UT	LMER		Ballistic missile component, system, or booster related reports only
14	HQ AFIC KELLY AFB TX	SE		COMSEC or
15	AFCSC KELLY AFB TX	MMIVC		crypto equipment related reports only
16	363 TRS SHEPPARD AFB TX	TTMTM-N		Materiel failure / malfunction / damage and TO deficiency related
17	344 TRS LACKLAND AFB TX	TTLS		reports only

Table 12.1. Continued.

	A	B	C	D
	Organization	Office	Reports	Remarks
18	AGMC NEWARK AFS OH	SE	DULL SWORD	Ballistic missile related reports involving guidance systems, computer faults, or chromate leaks only
19	ASC EGLIN AFB FL	ALZ		Materiel failure / malfunction / damage and TO deficiency related reports involving munitions handling equipment or vehicles used to transport or lift nuclear weapons
20	896 MUNS NELLIS AFB NV	SE		Reports involving nuclear weapons
21	898 MUNS KIRTLAND AFB NM	SE		or associated DOE test and handling
22	FCDSWA KIRTLAND AFB NM	FCP		equipment only
23	HQ USAF WASHINGTON DC	SP		Security related
24	MAJCOM owning security force	SP		reports involving
25	MAJCOM of host base	SP		air logistical
26	HQ AMC SCOTT AFB IL	SE/SP/XO and TACC/DOO		movements only
27	HQ AMC SCOTT AFB IL	SE/XO/LGA/ LGT and TACC/DOO		Materiel failure / malfunction / damage involving aircraft and munitions handling equipment used in air logistical movements only
28	HQ AMC SCOTT AFB IL	DOA		Reports involving air logistical movements only

NOTES:
1. Refer to AFDIR 37-135 for mail addresses and AFDIR 33-131 for message addresses.
2. Provide reports involving specific weapon systems or certified support equipment to the appropriate system program office or air logistics center (e.g., for F-16 related reports, send to F-16 program office and F-16 depot manager).

★Table 12.2. Reporting Schedule for Nuclear Weapon System Mishap Reports.

	A	B	C	D	E
	Report	submit	by	to	Remarks
1	OPREP-3 (use format in AFMAN 10-206)	as required by AFMAN 10-206	appropriate precedence message	addressees in table 12.1 and as required by AFMAN 10-206	do not include privileged information
2	Preliminary (use format in paragraph 12.6)	within 8 hours	appropriate precedence message	Addressees in table 12.1	include the term "PRELIMINARY" in subject line
3	Supplemental (use format in paragraph 12.6)	as required after preliminary report is submitted			include the term "SUPPLEMENTAL" in subject line
4	Final (use format in paragraph 12.6)	within 30 calendar days			include the term "FINAL" in subject line; send requests for due date extension to investigating MAJCOM and info HQ AFSC/SEW
5	Formal	within 30 calendar days	AF Form 711-series		send requests for due date extension to investigating MAJCOM and info HQ AFSC/SEW

★Table 12.3. Reporting Schedule for Nuclear Weapon System Safety Deficiency Reports.

	A	B	C	D	E
	Report	submit	by	to	Remarks
1	Preliminary or one-time (use format in paragraph 12.8)	within 15 workdays (see notes 1 and 3)	routine precedence message (see notes 1 and 2)	addressees in table 12.1	include the term "PRELIMINARY" or "ONE-TIME" in subject line
2	Supplemental (use format in paragraph 12.8)	as required after preliminary report is submitted			include the term "SUPPLEMENTAL" in subject line
3	Final (use format in paragraph 12.8)	within 90 calendar days if not submitted as a one-time report			include the term "FINAL" in subject line; send requests for due date extensions to investigating MAJCOM and info HQ AFSC/SEW

NOTES:

1. For a possible code compromise, send a preliminary message within 24 hours with an IMMEDIATE priority precedence.
2. See paragraphs 4.6 and 12.4.1 for MINIMIZE instructions. A DULL SWORD event may sometimes warrant a higher priority, but do not use priorities solely to meet time suspenses.
3. Submit DULL SWORD reports that involve weapons in nonoperational status or require evaluation by the design agency within 3 workdays

★**Table 12.4. Addressees for Nuclear Reactor System and Radiological Reports.**

	A	B	C	D
	Organization (see note)	Office	Reports	Remarks
1	HQ USAF WASHINGTON DC	SEI	FADED GIANT, MISSING PENNY	OPREP-3
2	HQ AFSC KIRTLAND AFB NM	CC		addressee
		SEW		
3	MAJCOM or command concerned	as required		
4	Numbered Air Force or intermediate command	as required		
5	AFSPA KIRTLAND AFB NM	SPO		OPREP-3 addressee; Security-related reports only
6	HQ AFMC WRIGHT-PATTERSON AFB OH	SEW/DRW		Materiel failure/ malfunction/ damage and TO
7	System Program Director Air Logistics/Product Center (see TO 00-25-115)	SE		deficiency related reports only
8	Item Manager Air Logistics Center OC-ALC TINKER AFB OK OO-ALC HILL AFB UT SA-ALC KELLY AFB TX SM-ALC MCCLELLAN AFB CA WR-ALC ROBINS AFB GA	as required SEW/LARM SEW/LF-S SEW/LACS SEW/LAFS SEW/SEM		Materiel failure/ malfunction/ damage and TO deficiency related reports involving general-use sup-port equipment
9	HQ AFMOA BOLLING AFB DC	SGPA		Radiological related reports only
10	AFOMS BROOKS AFB TX	SGPR		AFI 40-201 provides additional requirements

NOTE: Refer to AFDIR 37-135 for mail addresses and AFDIR 33-131 for message addresses.

★**Table 12.5. Reporting Schedule for Nuclear Reactor System and Radiological Mishap Reports.**

	A	B	C	D	E
	Report	submit	by	to	Remarks
1	OPREP-3	as required by AFMAN 10-206	appropriate precedence message (see AFMAN 10-206)	addressees in table 12.4 and as required by AFMAN 10-206	do not include privileged information
2	Preliminary (use format in paragraph 12.12)	within 8 hours	appropriate precedence message	addressees in table 12.4	include the term "PRELIMINARY" in subject line
3	Supplemental (use format in paragraph 12.12)	as required after preliminary report is submitted			include the term "SUPPLEMENTAL" in subject line
4	Final (use format in paragraph 12.12)	within 30 calendar days			include the term "FINAL" in subject line; send requests for due date extension to investigating MAJCOM and info HQ AFSC/SEW
5	Formal	within 30 calendar days	AF Form 711-series		send requests for due date extension to investigating MAJCOM and info HQ AFSC/SEW

★**Table 12.6. Reporting Schedule for Nuclear Reactor System and Radiological Safety Deficiency Reports.**

	A	B	C	D	E
	Report	submit	by	to	Remarks
1	MISSING PENNY (use free form format)	within 24 hours of discovery	routine precedence message	HQ AFSC/SEW	report Items A.1., A.2., B.1., and B.2. found in Attachment 1, definition of Missing Penny.
2		within 48 hours of discovery			report Items A.3., B.3. through B.7. found in Attachment 1, definition of Missing Penny.
3	MISSING PENNY (use format in paragraph 12.15)	within 45 days of discovery	letter	addressees in table 12.4	report all Missing Penny events listed in Attachment 1 definition.

Chapter 13

LIFE SCIENCES SAFETY REPORTING

13.1. General Information. Report the aeromedical, life support, egress and other human factors related to a mishap as life sciences safety information. Life sciences safety reports are required for Class A or B aircraft mishaps. Send these reports in accordance with table 5.1. This chapter provides instructions for life sciences safety reporting.

13.2. Life Sciences and Toxicology (TOX) Reporting.. Life Sciences information is reported in Tab Y (including AF Form 711GA, the Life Sciences Narrative, and Life Sciences Summary) of the formal Safety Investigation Board report. Toxicology (drug screen and alcohol determination) is reported on the AF Form 711GA, and if relevant to the mishap, is discussed in the Narrative Report of Tab Y. Significant Life Sciences and toxicology information, as well as related findings and recommendations, may be reported in Tab T as required by the Safety Investigation Board President.
13.2.1. For formal safety reports, use AF Form 711GA, **Life Sciences Report of an Individual Involved in an Air Force Flight/Flight Related Mishap.**
13.2.2. For Class C physiological mishaps, use AF Form 711GC, **Life Sciences Report of a Class C Physiological Mishap**, or include comparable information in a message report. Chapter 7 has specific reporting requirements.
13.2.3. Refer questions on form completion or reporting procedures to HQ AFSC/SEF (Life Sciences) DSN 246-0837 or commercial (505) 846-0837.

13.3. Classifying Injuries:
13.3.1. **Fatal Injury.** Injuries resulting in death, either in the mishap or at any later time, due to complications arising from the mishap injuries.
13.3.2. **Disability.** Disabilities resulting from mishap injuries are divided into two categories, permanent total disability and permanent partial disability.
13.3.3. **Lost Workday Injury.** An injury not resulting in death or disability but with one or more lost workdays. Lost workday injuries are divided into major and minor categories.
13.3.3.1. A major lost workday injury is a nonfatal injury which does not result in disability but requires admission to hospital, restriction to quarters, or a combination of both, for 5 or more days. It also includes any of the following, regardless of hospital status:

- Unconsciousness for more than 5 minutes due to head trauma.
- Fracture of any bone, except simple fracture of the nose or phalanges.
- Traumatic dislocation of major joints or internal derangement of a knee.
- Moderate to severe lacerations resulting in severe hemorrhage or requiring extensive surgical repair.
- Injury to any internal organ.
- Any third degree burns or any first or second degree burns (including sunburn) over 5 percent of the body surface.

13.3.3.2. A minor lost workday injury is an injury less than major which results in one or more lost workdays.
13.3.4. **No Reportable Injury.** No injuries occur or injuries are minimal and do not result in a lost workday, including first aid treatment or observation.
13.3.5. **Missing.** The location of the body is not known or the body is not recoverable and the degree of injury is unknown. These cases equate to a fatal injury for mishap classification purposes.

13.4. Instructions for Investigating and Reporting Life Science Aspects of Major Mishaps:
13.4.1. **Interim Board Actions.** The interim safety investigation board medical officer and mortuary officer assigned by the commander of the Air Force base nearest to the mishap initially collect life sciences evidence in a Class A or B mishap (see Chapter 1). Together, they do the following:

- Preserve perishable evidence, to include video and still photography at the mishap site, collecting laboratory samples, completing radiological studies, and obtaining initial witness statements.
- Ensure nonperishable evidence associated with human remains (life support equipment, aircraft egress systems, etc.) is left undisturbed at the mishap site.
- Contact the Armed Forces Institute of Pathology (AFIP) to coordinate forensic pathology assistance. AFIP can be reached via telephone at any time through DSN 662-2626 or commercial (202)576-3232.

- Contact HQ AFSC/SEF for further assistance. Guidance for the interim board medical officer is also found in Chapter 1 of this instruction, AFI 48-125, AFPAM 91-211, and *The Society of USAF Flight Surgeon's Checklist*.

13.4.1.2. Consider using technical specialists in aircraft egress systems and human performance factors early in the investigation.

13.4.2. **Preparing the Life Sciences Portion of Formal Safety Reports:**

★13.4.2.1. The life sciences portion of a formal safety report is normally accomplished by a primary medical member, assisted by a life support officer as necessary. If there is no medical or life support officer, the investigating officer prepares all required life sciences documentation.

★13.4.2.2. Life Sciences Narrative. For those mishaps where a life sciences narrative is required, prepare a consolidated narrative. The narrative will be completed in two physically distinct parts. Part I will include a short history of flight and a thorough discussion of all factors contributing to the mishap. Do not accomplish routine negative "rule out" reviews; indicate only those factors that have specific relevance to the mishap. Do not provide routine definitions of aeromedical or human factors terms. This discussion must also address significant ejection, life support, rescue, and survival factors. Findings and recommendations from Part I, determined to be significant must also be discussed and incorporated into the appropriate sections of Tab T and included in Tab T findings and recommendations as appropriate. Part II will include discussions of factors investigated and found not to be a relevant in the mishap and any other negative findings that the medical investigator determines should be discussed to show how they were logically ruled out. Also include factors discovered that potentially could have had consequences on this mishap or could lead to a mishap, injury, or delayed rescue in future operations, i.e., if investigations determine that a piece of survival equipment did not or would not function as required, even though it did not figure in the mishap sequence, that fact needs to be identified. Findings and recommendations of other significance, from Part II, must also be discussed and incorporated into the appropriate sections of Tab T and included in Tab T findings and recommendations of other significance as appropriate. Save both Part I and Part II of the narrative on a computer disk under different file names (i.e., "part1.doc" and "part2.doc"). Include the narrative information under human factors, Man Category, within Tab T.

★13.4.2.3. Life Sciences Summary. Prepare a life sciences summary for each mishap requiring a formal report. This summary is a single abstract coalescing the most critical facts cited in the life sciences narrative Part I. Do not use a verbatim copy of the Part I summary in your narrative. Do not use dates, the specific names of individuals, or locations in this summary. The life sciences summary, describing only the essential aspects of the mishap from a human factors perspective, in less than one page, is placed at the beginning of Tab Y in the formal report. Save the Life Sciences Summary to disk under the file name "LSS.DOC".

13.4.2.4. AF Form 711GA or electronic equivalent:

13.4.2.4.1. Use this form in formal reports of aircraft mishaps or ground (aircraft involvement) mishaps. Some persons may be covered by several rules in this paragraph, however, only one report is required on any one individual. Complete one form for:

- Each primary crewmember, regardless of injury.
- Each individual whose actions or inaction may have been factors in the mishap sequence. This includes maintenance, air traffic control, and other ground support personnel.
- Each individual evacuating the aircraft in flight.
- Each individual involved in a survival situation or requiring rescue.
- Each individual suffering a fatal or permanently disabling injury or illness as a result of mishap.

13.4.2.4.2. In mishaps where there is the possibility of life support equipment failure, the life support officer must participate in the investigation and complete applicable sections of Tab Y.

★13.4.2.4.3. A consolidated Part I and a consolidated Part II for the narratives are preferred over a Part I and a Part II for each individual involved in the mishap. Although consolidated, each individuals' role in the mishap should be clearly delineated. If individual narratives are needed to effectively capture the mishap information then the medical investigator must fir coordinate this with AFSC/SEFL before submitting the narratives in the final report.

★13.4.2.4. A typical Tab Y will contain the following in this order:

- Life Science Summary (Save as LSS.DOC)
- Life Science Narratives, Part I and Part II (Save as PART1.DOC and PART2.DOC)
- Life Science and Human Factors Consultant Reports when available (Save as HF.DOC)
- AF Form 711GA(s) or electronic equivalent (Save following direction in program instructions)
- For each rated individual: the latest two physicals if one is long, else the latest three physicals, for other individuals involved in the mishap only include physicals if determined appropriate by the medical investigator, (include only in the report sent to HQ AFSC).

- Any other reports obtained by the medical investigator, i.e., TOX tests, x-rays, autopsy reports, post mishap exam results, etc., that support finding or recommendations made by the medical investigator (include only in the report sent to HQ AFSC).

NOTE: Send all saved files to AFSC/SEFL on a 3.5 inch disk when final.

13.5. Documenting and Reporting Class C Physiological Mishaps. Submit AF Form 711GC for Class C physiological mishaps. See paragraph 7.4.7.13 for reporting requirements and procedures.

13.5.1. You prepare the AF Form 711GC as a part of the standard report. A 72-hour history, TOX and laboratory tests are required for standard reports.

13.5.2. The Air Force flight surgeon responding to the physiological incident completes the AF Form 711GC. In situations where the mishap individual is not initially treated by an Air Force physician, the Air Force flight surgeon with final medical disposition of the case completes the form.

13.5.3. The life support officer must comment on any life support equipment failure or malfunction contributing to a physiological mishap, describing corrective action taken as appropriate.

★13.5.3. The flight surgeon forwards the completed form to the required addresses within the time limit specified in Chapter 4 and forwards a copy to the local flight safety office for their records.

Chapter 14

FOREIGN OBJECT DAMAGE (FOD)

★14.1. General Information. FOD mishaps can only occur when reportable turbine engine damage results from foreign (external) objects. Use this category when damage is confined to the engine or to integral engine components, such as engine mounted accessory gearboxes and plumbing.

14.1.1. When foreign objects cause reportable damage (not confined to the engine), report it in the appropriate category other than FOD.

★14.1.2. FOD reports may be privileged or non-privileged, depending upon any cross-category involvement, for example flight-related or aircraft involved.

14.1.3. Guidelines:

14.1.3.1. Do not report damage limited to the engine and caused by internal engine parts or components as FOD mishaps. These parts or components are not foreign objects.

★14.1.3.2. Do not report damage to engine components as FOD if such damage was a result of personnel error or design deficiency even if damage is limited to the engine.

14.1.3.3. While reporting may be appropriate through other programs, do not report FOD damage under this category if such damage occurred during air refueling operations.

14.2. Reporting Certain Events as Class C Flight Mishaps. Report in-flight events listed in paragraph 7.4.7 as Class C mishaps even if they do not meet normal Class C reporting criteria. While these could be the result of FOD, report according to paragraph 7.4.7 unless FOD is "readily identifiable" as a valid factor. For reporting purposes, "readily identifiable" means within 8 hours of discovery.

14.3. Investigating FOD Mishaps. The wing level organization having the mishap may investigate all classes of FOD mishaps without injury when damage is limited to the engine. The wing Chief of Safety appoints one or more qualified investigators as necessary.

14.4. Reporting FOD Mishaps. Follow chapters 4.

Chapter 15

MISCELLANEOUS AIR OPERATIONS MISHAPS

15.1. General Information. These mishaps involve intent for flight in non-Air Force and Aero Club aircraft. They are a separate category and are not ground or aircraft mishaps. All reports under this category are nonprivileged reports.

15.2. Investigating and Reporting Miscellaneous Air Operations Mishaps:

★15.2.1. **Commercial, Foreign, and Civil Aircraft.** The chief of safety for the assigned unit of the injured Air Force personnel will use the procedures in chapter 11 as a guide for reporting these mishaps and will determine the safety personnel who will investigate the mishap. Any Air Force investigation conducted under this chapter will not take precedence over or interfere with host nation or federal investigations of non-Air Force aircraft mishaps. Use CMR non-privileged formats (figure 4.2 and 4.3) and addresses listed in Table 4.2 to prepare mishap reports. Example of a subject line will be SUBJECT: CLASS A, Miscellaneous Air Operations, Foreign Aircraft, Collision with Ground, Preliminary, 96/09/03, ZYCA, 001A.

★15.2.2. **Aero Club Aircraft.** The chief of safety for the installation possessing the Aero club aircraft will use the procedures in chapter 11 as a guide for reporting these mishaps and will determine the safety personnel who will investigate the mishap. Classify mishaps according to AFI 34-217 Chapter 3 as well as Chapter 2 of this regulation based upon both injuries and property damage sustained. For mishap prevention purposes, all Aero Club aircraft are considered appropriated fund assets. Investigate and report Class A, B, and C mishaps and events identified in paragraph 7.4.7. All reports will be forwarded to HQ AFSC/SEF and HQ AFSVA/SVPAR. Any Air Force investigation conducted under this chapter fulfills the Air Force mishap reporting requirements of AFI 34-217, and 91-202, and shall not take precedence over or interfere with civil aviation authorities or agencies investigating a non-Air Force aircraft mishap. Use CMR non-privileged formats (figure 4.2 and 4.3) and addresses listed in Table 4.2 and AFI 34-217 to prepare mishap reports.

15.2.2.1. An Air Force Flight Safety Officer (FSO) conducts an official investigation on each reportable aero club mishap.

15.2.2.2. The FSO shall impound all applicable member training and checkout records, as well as any applicable aircraft or aircraft components until a reasonable determination.

15.2.2.3. FSO will request technical assistance from HQ AFSVA/SVPAR for technical assistance in accordance with AFI 34-217.

15.2.2.4. FSOs prepare message reports according to AFI 91-204, send the reports to all AFI 91-204 addresses and address indicator group (AIG) 9405.

15.2.2.5. The installation command endorses all Class A mishap reports and then sends them through channels to the MAJCOM commander.

15.2.2.6. HQ AFSC renders the final evaluation on all mishaps involving injury to personnel in accordance with this document. HQ AFSVA/SVPAR renders the final evaluation on all other mishaps.

★15.2.3. **Other US government non-AF aircraft.** Air Force personnel associated with other DoD Service mishaps will be reported by that Service with a copy of the mishap report coming to the Air Force, see paragraph 3.2.4 for specific procedures. Non-DoD aircraft mishaps would be investigated under procedures outlined in paragraph 15.2.1.

15.3. Determining Accountability. In all cases, the assigned command of the injured person or damaged Aero Club aircraft is the accountable command. If personnel from two or more MAJCOMs are injured, HQ AFSC will assign the mishap to only one command.

ORIN L. GODSEY, Brig General, USAF
Chief of Safety

GLOSSARY OF REFERENCES, ABBREVIATIONS, ACRONYMS, AND TERMS

References

	Air Force Civilian Drug Testing Plan
AFPD 35-1	*Public Affairs Management* (formerly AFR 190-1)
AFPD 36-27	*Social Actions* (formerly AFR 30-2)
AFPD 91-2	*Safety Programs*
AFI 10-601	*Mission Needs and Operational Requirements Guidance and Procedures* (formerly AFR 57-1)
AFI 11-101	*Flying Hour Program Guidance and Procedures* (formerly AFR 27-7)
AFI 11-206	*General Flight Rules* (formerly AFR 60-16)
AFI 11-215	*Flight Manual Procedures* (formerly AFR 60-9)
AFI 13-202	*Overdue Aircraft* (formerly AFR 55-5)
AFI 21-102	*Depot Maintenance Management* (formerly AFR 66-3, AFR 66-7, and AFR 66-11)
AFI 21-103	*Aircraft, Missile, and Equipment Accountability* (formerly AFR 65-110 and AFR 66-12)
AFI 23-101	*Air Force Centrally Managed Equipment* (formerly AFM 57-1)
AFI 24-302	*Vehicle Maintenance Management* (formerly AFM 77-310, Volume 2)
AFI 31-401	*Information Security Program Management* (formerly AFR 205-1)
AFI 32-4001	*Disaster Preparedness Planning and Operations* (formerly AFR 355-1)
AFI 33-212	*Reporting COMSEC Incidents* (formerly AFSSI 4006)
★AFI 34-217	*Air Force Aero Club Program* (formerly AFR 215-12)
AFI 34-501	*Mortuary Affairs Program* (formerly AFR 143-1, AFM 143-3, AFR 143-9, and AFP 143-10)
AFI 36-503	*Civilian Travel and Transportation PCS* (formerly AFR 40-18 and AFR 40-230)
AFI 36-2104	*Nuclear Weapons Personnel Reliability Program* (formerly AFR 35-99)
AFI 36-3002	*Casualty Services* (formerly AFR 30-25)
AFI 37-122	*Air Force Records Management Program* (formerly AFR 4-74)
AFI 37-131	*Air Force Freedom of Information Act Program* (formerly AFR 4-33)
AFI 40-201	*Management of Radioactive Materials in the Air Force* (formerly AFR 161-16)
AFI 44-102	*Professional Procedures* (formerly AFR 160-12)
AFI 44-120	*Drug Abuse Testing Program* (formerly AFR 160-23)
AFI 48-125	*USAF Personnel Dosimetry Program* (formerly AFR 161-28)
AFI 51-503	*Aircraft, Missiles, Nuclear, and Space Accident Investigations* (formerly AFR 110-14)
AFI 51-602	*Boards of Officers* (formerly AFR 11-31)
AFI 65-601, Volume 1	*Air Force Budget Policies and Procedures* (formerly AFR 172-1, Volume 1 and AFR 172-81)
AFI 91-101	*Air Force Nuclear Weapons Surety Program* (formerly AFR 122-1)
AFI 91-104	*Nuclear Surety Tamper Control and Detection Programs* (formerly AFR 122-4)
AFI 91-109	*Air Force Nuclear Reactor Program* (formerly AFR 122-14 and AFR 122-34)
AFI 91-110	*Nuclear Safety Review and Launch Approval for Space or Missile Use of Radioactive Material and Nuclear Systems*

	(formerly AFR 122-16)
AFI 91-202	*The Air Force Mishap Prevention Program* (formerly AFR 127-2)
AFJI 91-206	*Participation in a Military or Civil Aircraft Accident Safety Investigation* (formerly AFR 127-11)
AFI 91-301	*The Air Force Occupational and Environmental Safety, Fire Prevention, and Health Program* (formerly AFR 127-12)
AFI 91-302	*Air Force Occupational Safety and Health Standards* (formerly AFR 8-14)
AFMAN 10-206	*Operational Reporting* (formerly AFR 55-55)
AFMAN 23-110	*USAF Supply Manual* (formerly AFM 67-1)
AFM 171-214	*Aerospace Safety Automation Program (ASAP): R020/GT End Users' Manual,* Volume I and Volume II
AFMAN 37-139	*Records Disposition-Standards* (formerly AFR 4-20, Volume 2)
AFPAM 10-203	*SORTS Data Element Dictionary and Formats* (formerly AFP 55-62)
AFPAM 91-211	*Air Force Guide to Mishap Investigation* (formerly AFP 127-1)
AFDIR 33-131	*Message Address Directory* (formerly AFR 700-310)
AFDIR 37-135	*Air Force Address Directory* (formerly AFR 4-16)
DoDD 5100.52	*DoD Response to an Accident or Significant Incident Involving Radioactive Material*, 21 December 1989
DoDD 5400.7	*DoD Freedom of Information Act Program*, 13 May 1988
DoDI 5000.2	*Defense Acquisition Management Policies and Procedures*, 23 February 1991. (includes AF Sup 1.)
DoDI 6055.7	*Mishap Investigating, Reporting, and Recordkeeping*, 10 April 1989
JCS Publication 1-03.6	*Joint Reporting Structure, Event/Incidents Report*, November 1980
JCS Publication 6-04.22	*USMTF Message Preparation Instructions*, October 1992
NATO Air Standard 85/2A	*Investigation of Aircraft/Missile Accidents/Incidents*
NATO STANAG 3101	*North Atlantic Treaty Organization Exchange of Accident/Incident Information Concerning Aircraft and Missiles*, 22 September 1989
NATO STANAG 3102	*Flight Safety Cooperation*, 5 June 1990
NATO STANAG 3531	*Safety Investigation and Reporting of Accident/Incidents Involving Military Aircraft and/or Missiles*, 4 October 1991
OMB Bulletin 1220-0029	*Recordkeeping Guidelines for Occupational Injuries and Illnesses*

Abbreviations and Acronyms

AB	Afterburner
AC	Finance
ACI	Analytical Condition Inspection
AETC	Air Education and Training Command
AF	Air Force
AFFN	Air Force Foreign Nationals
AFI	Air Force Instruction
AFIP	Armed Forces Institute of Pathology
★AFJI	Air Force Joint Instruction
AFL	Air Force at Large
AFLSA	Air Force Legal Services Agency
★AFM	Air Force Manual
★AFMAN	Air Force Manual
AFMC	Air Force Materiel Command
AFMOA	Air Force Medical Operations Agency
AFORM	Air Force Form
AFOSI	Air Force Office Of Special Investigations

AFOTEC	Air Force Operational Test and Evaluation Center
★AFPAM	Air Force Pamphlet
AFPD	Air Force Policy Directive
AFPEO	Air Force Program Executive Offices
AFR	Air Force Regulation
AFRES	Air Force Reserve
AFSC	Air Force Specialty Code
★AFSPC	Air Force Space Command
AFTO	Air Force Technical Order
AGL	Above Ground Level
★AIA	Air Intelligence Agency
AIB	Accident Investigation Board
AIG	Address Indicating Group
ALC	Air Logistics Center
ALMAG	Air Launched Missile Analysis Group
AMM	Acquisition Material Management
ANG	Air National Guard
ANGUS	Air National Guard Of The United States While In Active Military Service
AOA	Angle of Attack
ARC	Air Reserve Component
ASAP	Aerospace Safety Automation Program
ASC	Aeronautical System Center
ATC	Air Traffic Control
ATSC	Air Traffic Services Center
ATV	All Terrain Vehicle
BAC	Blood Alcohol Count
BASH	Bird-Aircraft Strike Hazard
BUC	Backup Fuel Control
C	Celsius
CAD	Cartridge Actuated Device
CAP	Civil Air Patrol
CAR	Category-Agent-Reason Methodology
CAVOK	Visibility Greater Than 10 Kilometers
CE	Civil Engineering
CINC	Commander In Chief
CIV	Civilian
CMD	Command
CMR	Consolidated Mishap Report
COMBS	Contractor Operated And Maintained Base Supply System
CONUS	Continental United States
COP	Continuation Of Pay
CP	Copilot
CPI	Crash Position Indicator
CUT	Coordinated Universal Time
CVR	Cockpit Voice Recorder
DAACO	Drug and Alcohol Abuse Control Officer
DAF	Department of the Air Force
DB	Data Base
DCMC	Defense Contract Management Command
DD FORM	Department of Defense Form
DET	Detachment
DLA	Defense Logistics Agency
DME	Distance Measuring Equipment
DO	Director of Operations
DoD	Department of Defense
DoDD	Department of Defense Directive

DoDI	Department of Defense Instruction
DOE	Department of Energy
DOT	Department of Transportation
DP	Director of Personnel
DR	Deficiency Reports
DRU	Direct Reporting Unit
DSN	Defense Switched Network
DSWA	Defense Special Weapons Agency
DT&E	Development, Test and Evaluation
★ECM	Electronic Counter Measures
EEC	Electronic Engine Control
ELT	Emergency Locator Transmitter
EOD	Explosive Ordnance Disposal
EPAF	European Participating Air Forces-Belgium, Denmark, Norway, and the Netherlands
EST	Eastern Standard Time
EUR	Europe
FAA	Federal Aviation Administration
FAX	Facsimile Machine
FBI	Federal Bureau of Investigation
FCF	Functional Check Flight
FCDWSA	Field Command Defense Special Weapons Agency
FDR	Flight Data Recorders
FEB	Flying Evaluation Board
FECA	Federal Employees Compensation Act
FL	Flight Level
FLT	Flight
FOA	Field Operating Agency
FOD	Foreign Object Damage
FOIA	Freedom of Information Act
FOT&E	Follow-On Test And Evaluation
FOUO	For Official Use Only
FP	First Pilot
FT	Fatal Injury
G	Measurement of Force Equal to the Force of Gravity
GFE	Government Furnished Equipment
GFP	Government Furnished Property
GLOC	G-Induced Loss of Consciousness
GM	General Manager
GMV	Government Motor Vehicle
GRP	Group
GS	General Schedule
GSA	General Services Administration
GSU	Geographically Separated Unit
HAP	High Accident Potential
HC	Chaplain
HO	Historian
HQ	Headquarters
HQ AFSC	Air Force Safety Center
HQ AFSC/JA	Assistant for Legal Matters, Office of the Chief of Safety
HQ AFSC/SEF	Aircraft Safety
HQ AFSC/SEG	Ground Safety
HQ AFSC/SEP	Safety Policy, Plans and Programs
HQ AFSC/SEC	Safety Technical Support
HQ AFSC/SEW	Weapons, Space and Nuclear Safety
HQ USAF	Headquarters United States Air Force
HQ USAF/SE	Air Force Chief of Safety

HQ USAF/SEI	Issues Division, Office of the Chief of Safety
HUD	Heads-up Display
ICAO	International Civil Aviation Organization
ICBM	Intercontinental Ballistic Missile
ILS	Instrument Landing System
IM	Item Manager
IMC	Instrument Meteorological Condition
IMR	Information Management-Records
IOT&E	Initial Operational Test and Evaluation
IP	Instructor Pilot
IWSM	Integrated Weapons System Management
JA	Judge Advocate
JP	Jet Propellant
KIAS	Knots of Indicated Airspeed
LAG	Launch Analysis Group
LGC	Contracting
LGK	Electronics Maintenance
LGM	Maintenance
LGS	Supply
LGT	Transportation
LGW	Munitions
LOX	Liquid Oxygen
LSSS	Limiting Safety System Settings
★MAAF	Mishap Analysis and Animation Facility
MAJCOM	Major Command
MAOM	Miscellaneous Air Operations Mishaps
MARS	Mid-Air Retrieval System
MDS	Mission Design Series
MFR PN	Manufacturer's Part Number
MISTR	Management of Items Subject to Repair System
MK	Mark
MLS	Microwave Landing System
MMD	Mean Mission Duration
MOFE	Memorandum of Final Evaluation
MPH	Military Public Health
MRP	Mishap Review Panel
MSE	Missile Support Equipment
MSL	Mean Sea Level
MSTG	Material Safety Task Group
MTMC	Military Traffic Management Command
MWR	Morale, Welfare and Recreation
NAF	Non-Appropriated Fund Civilian or Numbered Air Force
NATO	North Atlantic Treaty Organization
NCO	Non-Commissioned Officer
NOAF	Non-Air Force
NOM	Name Of Part (Nomenclature)
NONAF	Non-Air Force
NSA	National Security Agency
NSN	National Stock Number
NTSB	National Transportation And Safety Board
NVM	Nonvolatile Memory
OBA	Operating Budget Authority
OC/LAB	Other Centers/Laboratories (Development or Flight Test Center, AF Laboratories, etc.)
★OFS	Other Findings of Significance
OIDR	Occupational Illness and Data Registry
OL	Operating Location

OPREP	Operational Report
★ORS	Other Recommendations of Significance
OSHA	Occupational Safety and Health Administration
OT&E	Operational Test and Evaluation
OWCP	Office of Workmen's Compensation Program
PA	Public Affairs
PACAF	Pacific Air Forces
PAD	Propellant Actuated Device
PCS	Permanent Change of Station
PCTR	Product Center
PEO	Program Executive Office
PMV	Private Motor Vehicle
PO	Post Office
PP	Permanent Partial
PRN	Person
PT	Permanent Total
QA	Quality Assurance
R&D	Research & Development
RAF	Royal Air Force-United Kingdom
RCN	Report Control Number
RCR	Runway Condition Reading
REGAF	Regular Air Force
RIN	Air Force Reserve Member not on Active Duty
ROTC	Reserve Officer Training Corps
RPI	Rated Position Identifier
RPS	Reactor Protective System
RPV	Remotely Piloted Vehicle
SC	Computers/Communications
★SE	Chief of Safety (HQ USAF, NAF, and Wing Level)/Directory of Safety (MAJCOM)
SG	Surgeon General
SIB	Safety Investigation Board
SJA	Servicing Staff Judge Advocate
SMC	Space and Missile Systems Center
SN	Serial Number
SP	Security Police
SPD	System Program Director
SPV	Special Purpose Vehicle
SQDN	Squadron
SSAN	Social Security Account Number
SSW	South-Southwest
STANAG	Standard of Agreement
SV	Services
TCTO	Time Compliance Technical Order
TDI	Tamper Detection Indicator
TDPFO	Temporary Duty Pending Further Orders
TDR	Teardown Deficiency Report
TED	Transfer Effective Date
TNG	Training
TO	Technical Order
TOX	Toxicological
TT	Temporary Total
TTC	Technical Training Center
UAV	Unmanned Aerial Vehicle
UCMJ	Uniform Code of Military Justice
UNCLAS	Unclassified
USA	United States Army

USAF	United States Air Force
USAFE	United States Air Forces in Europe
USC	United States Code
USCG	United States Coast Guard
USN	United States Navy
VMC	Visual Meteorological Conditions
VTR	Videotape Recording
WG	Wing
WUC	Work Unit Codes
YOP	Youth Opportunity Program

Terms

ADDENDUM. Additional written comments made by the MAJCOM/CC and attached to the SIB's formal report or final mishap message.

★**AEROCLUB AIRCRAFT.** These are all aircraft assigned to the respective Aero Club. These aircraft may have been acquired by the Aero Club through, purchase, lease, or loan from the government. Aero Clubs are authorized excess DoD and GSA aircraft on a loan basis. *NOTE:* Air Force Aircraft on-loan to Aero Club are Aero Club aircraft and reported under the provisions of Chapter 15 not Chapter 7.

AIR RESERVE COMPONENTS (ARC). All units, organizations, and members of the ANG and AFRES (10 U.S.C. 261) on active duty, on active duty for training, or in drill status, and ANG and AFRES technicians; include ANG and AFRES property and equipment. Military status starts upon beginning duty for military pay and ends when duty stops. (All references to Air Force military personnel and property also apply to ARC military personnel and property).

AIRCRAFT INVOLVEMENT MISHAPS. Mishaps involving Air Force aircraft without intent for flight. The term "aircraft involvement" appears in parentheses after the primary category of the mishap. Examples include ground (aircraft involvement), explosives (aircraft involvement), missile (aircraft involvement), etc.

AIRCRAFT MISHAPS. Mishaps involving Air Force aircraft.

★**AIR FORCE AT LARGE**. This term is use in two separate cases in this document below are the definitions for both

- For Category-Agent-Reason Methodology this includes exchange students, military members in a nonpay status while waiting for appellate review if they have no written or verbal orders to return to an Air Force installation, prior service personnel on leave before reporting to initial permanent duty assignment, etc.
- For Mishap reporting categorization it includes aircraft leased to manufacturers for demonstration purposes (code XY) if the lessee does not assume the risk of loss. It is also used for unified or joint command mishaps where the flying hours are not assigned to a specific major command.

BEELINE/FADED GIANT. A nuclear reactor system or radiological incident as defined by the criteria in paragraph 12.1.3.7.

BENT SPEAR. A reporting flagword identifying a nuclear weapon system incident. This includes mishaps not in the accident category but meeting any of the criteria in paragraph 12.1.3.4.

BROKEN ARROW. A reporting flagword identifying a nuclear weapon system accident which could not create risk of war. This includes accidental, unauthorized or unexplained events and the following:

- Nuclear detonation of a nuclear weapon.
- Nonnuclear detonation (no nuclear yield) or burning of a nuclear weapon, nuclear warhead, or nuclear component.
- Radioactive contamination from a nuclear weapon or nuclear component.
- Public hazard (actual or implied) from a nuclear weapon, nuclear warhead, or nuclear component.

CAUSE. A cause is an act, omission, condition, or circumstance which either starts or sustains a mishap sequence. It may be an element of human or mechanical performance. A given act, omission, condition, or circumstance is a "cause" if correcting, eliminating, or avoiding it would prevent the mishap or mitigate damage or injuries.

CAUSAL FINDING. Causal findings are those which, singly or in combination with other causal findings, logically result in damage or injury. They are identified with the word "cause" at the start of the text of the finding, and must contain category-agent-reason information.

★**COLLATERAL DAMAGE:** Damage or injury caused by a mishap other than the damage, destruction, or injury to the mishap equipment or personnel.

COMPETENT MEDICAL AUTHORITY. Allopathic (MD), osteopathic (DO), and chiropractic practitioners, as well as podiatrists, optometrists, dentists, and clinical psychologists. The term competent medical authority includes these medical practitioners only to the extent of their operations within the scope of their practice as defined by state law and subject to regulation by the Secretary of Labor. Competent medical authority also includes nurse practitioners and physician assistants under supervision of licensed medical practitioners

★**CONVENING AUTHORITY.** The individual who has the authority to order a mishap investigation with a single investigator or board.

DEPARTMENT OF THE AIR FORCE (DAF) CIVILIAN PERSONNEL. Include:

- Senior Executive Service (SES), general schedule (GS) and wage board (WG) employees, including ANG and AFRES technicians, unless in military duty status.
- Nonappropriated fund (NAF) employees who are not military personnel working part time.
- Youth Opportunity Program and Student Assistance Program employees.
- Foreign-national civilians employed by Air Force in direct or indirect hire status. Foreign-national, direct-hire employees are the same as DAF civilian employees. Foreign-national, indirect-hire employees are the same as DAF civilian employees only when the Air Force has supervisory or work performance control. This includes Air Force responsibility for any compensation claims arising from employment injury.

DISABILITY. Disabilities resulting from mishap injuries are divided into two categories, permanent total disability and permanent partial disability. (See definitions of these major categories for more detail).

DULL SWORD. A reporting flagword identifying a nuclear weapon safety deficiency. This includes mishaps not falling into the accident or incident categories, but meeting any of the criteria in paragraph 12.1.3.5.

EJECTION ATTEMPT. Completion of the action by the aircrew to initiate the ejection system, regardless of the outcome. For single motion systems, this only requires pulling the handle. For dual motion systems, both raising the sidearm and squeezing the trigger must be accomplished.

EJECTION EPISODE. A sequence of events beginning with the ejection attempt (or inadvertent initiation) and ending after landing. This normally consists of three parts (ejection, descent, and landing). However, it may be arrested by ground impact or mechanical malfunction at any stage.

EJECTION SYSTEM. A mechanical device designed to forcefully separate the crew from the aircraft and return them to the earth's surface. Example are an ejection seat, and extraction system, or a crew module.

EMPTY QUIVER. Loss, theft, seizure, or destruction of a nuclear weapon or component. Loss includes, but is not limited to, intentional weapon jettisoning according to approved Air Force procedures or inadvertent release of a nuclear component.

EXPLOSIVES. All items of ammunition, munitions fillers, demolition material, cartridges, and pyrotechnics. Also mines, bombs, grenades, warheads of all types (excluding missiles), and assembled kits and devices containing explosives material. Riot control agents, smoke and incendiaries are categorized as explosives.

- The terms "explosives," "explosives weight," "net weight," and other related terms refer to the fillers of explosive items. Fillers may be explosive mixtures, propellants, pyrotechnics, or toxic chemical agents.
- Liquid fuels and oxidizers when not used with missiles, rockets, and other such weapons or explosives items, such as JP-4, hydrazine, and liquid oxygen (LOX), are not explosives.

EXPLOSIVES MISHAP. Mishaps involving explosives, explosive devices, or toxic chemical agents functioning unintentionally or abnormally, or are accidentally damaged or destroyed in storage, handling, transport, maintenance, manufacture, testing, or operational use.

FATAL INJURY. Injuries resulting in death, either in the mishap or at any later time, due to complications arising from the mishap injuries.

FINDINGS. Findings are the conclusions of the SIB or investigator. They are single statements, in chronological order, of each significant event or condition sustaining the sequence leading to the mishap.

FIRST AID. Any one-time treatment or follow-up visit for observation of minor scratches, cuts, burns, and splinters which do not ordinarily need medical care. Such one-time treatment and follow-up visits for observation are first aid, even though provided by physicians or registered professional personnel. ***NOTE***: Use Office of Management and Budget (OMB) Bulletin 1220-0029, Recordkeeping Guidelines for Occupational Injuries and Illnesses, as a guide for determining whether medical treatment or first aid was rendered.

FLIGHT MISHAPS. Mishaps involving Air Force aircraft when intent for flight is established and there is reportable damage to the aircraft.

FLIGHT-RELATED MISHAPS. Mishaps with intent for flight established but without reportable damage to the aircraft itself. These mishaps may involve non-aircrew fatality, injury, or collateral damage. They are not used in the calculation of flight mishap rates.

★**FLIGHT-UNMANNED VEHICLE MISHAPS**. Mishaps involving full-scale unmanned RPVs and UAVs when intent for flight is established and there is reportable damage to the aircraft. They are not used in the calculation of flight mishap rates, however separate rates will be kept per AFI 91-202.

★**FOD MISHAPS**. Reportable mishaps confined to turbine engine damage as a result of external foreign objects. Use this category only when damage is confined to the engine or integral engine components, i.e. engine mounted accessory gearboxes and plumbing. When foreign objects cause reportable damage (not confined to the engine), report it in the appropriate category other than FOD. Failures of engine parts or components resulting in damage limited to the engine are not FOD mishaps. These parts or components are not foreign objects. However, such failures may be reportable under other Air Force programs such as the Materiel Deficiency Reporting and Investigating System, TO 00-35D-54.

GOVERNMENT MOTOR VEHICLE (GMV) MISHAP. Mishap involving a general purpose vehicle (as defined by Transportation series instructions; "B", "K", and "v" series vehicle) where the government vehicle is in an operational mode and the vehicle is damaged, or an injury, or property damage results from collision or unsecured cargo. For a list of GMV types are see para 11.4.2.1.

GROUND MISHAPS. Mishaps not defined in any other category. These are mishaps occurring without intent for flight (Air Force or non-Air Force aircraft), on ground or water, on or off an Air Force installation, and involving Air Force personnel and operations, Air Force contractor operations, or Air Force property.

GUIDED MISSILE. An unmanned vehicle with its own propulsion system moving above the surface of the earth and capable of changing trajectory or flight path by an external or internal mechanism. This term also includes tactical air-to-air and air-to-ground missiles and major missile components (stages, engines, guidance-and-control sections, and payloads other than nuclear reentry vehicles). This term does not apply to space vehicles.

HIGH ACCIDENT POTENTIAL (HAP) EVENTS. Significant aircraft, missile, space, explosives, miscellaneous air operations, or ground occurrences with a high potential for causing injury, occupational illness, or damage if they recur. These events do not have reportable mishap costs. If the total cost of the event meets Class C criteria, do not designate it as a HAP. Do not use the HAP designation with any class of mishap.

INADVERTENT EJECTION. Inadvertent initiation (mechanical or human) of the ejection system during flight by any stimulus except impact forces or thermal cook off. This includes initiation by wind blast forces, but excludes impact with trees, ground, or water.

INJURY. Traumatic bodily harm, comprising such conditions as fractures, lacerations, , sprains, strains, dislocations, concussions, and compressions, which results from an unplanned event. Classify single exposure incidents occurring in the work place or within a single duty shift as injuries when they involve foreign objects in the eye, such as a piece of metal, or chemical burns to the eye or skin, such as those caused by splashed material at a wash rack. Report an injury if it results in:

- A fatality, regardless of the length of time between injury and death.
- A lost workday case.
- A nonfatal case without lost workdays.

INTENT FOR FLIGHT. Intent for flight exists from start of takeoff roll until landing is completed. For conventional aircraft, this means from brake release, if set, or the start of throttle movement toward takeoff power for a rolling takeoff until safely clear of the runway after landing or aborted takeoff. Clear of the runway means the entire aircraft is physically off the active runway. For rotary-winged aircraft, intent for flight means from the start of power application to break ground contact until controlled ground contact is reestablished and, if landing on a runway, until safely clear of the runway. Hover taxi is considered flight.

LICENSED LAUNCH. Any commercial launch that is not indemnified by the government and has been issued a license by the Department of Transportation.

★**LOST WORKDAY CASES**. Those cases determined by competent medical authority as a nonfatal traumatic injury that causes any loss of time from work beyond the day or shift on which it occurred or a nonfatal traumatic illness that causes loss of time from work or disability at any time. If a competent medical authority determines an employee is able to perform normal or limited job assignments, but the employee disagrees and seeks a second opinion, the safety staff may use the opinion of the first medical authority for mishap reporting purposes if the diagnosis by the second medical authority is not significantly more severe. This includes days on quarters, hospital, and convalescent leave. Do not count the day of injury or the day returned to duty. Do not count days when personnel were not scheduled to work. For civilian personnel, lost work hours on the day of return are part of a lost workday case.

LOST WORKDAY INJURY. An injury not resulting in death or disability but with one or more lost workdays. Lost workday injuries are divided into major and minor categories or designated as "no reportable injury" as specified in paragraph 13.2.3.

MAJCOM COMMANDER. The term "MAJCOM commander" as used in this instruction includes field operating agency (FOA) and direct reporting unit (DRU) commanders, system program directors (SPD) or equivalent, Air Force Program Executive Officers (AFPEO), etc. In addition, this term includes the air component commander of unified commands during contingency operations.

MISCELLANEOUS AIR OPERATIONS MISHAPS (MAOM). Mishaps resulting in a fatality or injury to Air Force personnel where intent for flight exists but not involving an Air Force aircraft (i.e., foreign, civil, or Aero club), except for aircraft described in paragraph 7.2.3.4.

MISHAP COSTS. These are the total costs of damage, injury and illness from Air Force mishaps. Use total mishap cost to classify nonnuclear mishaps. See paragraph 2.5 for mishap classes and criteria. Determine mishap costs according to paragraph 2.4. Report costs even though the US Government is wholly or partially reimbursed for them.

MISSILE MISHAPS. Mishaps involving missiles that are propelled through air or water that are unmanned, guided by internal or external systems, self-propelled, and designed to deliver ordnance to a target or act as a target. This term includes missile support equipment.

MISSILE SUPPORT EQUIPMENT (MSE). (Not applicable to air-launched missiles). Any component of ground launched missile systems used to handle or transport missiles or missile components. MSE includes, but is not limited to, system unique vehicles, such as, reentry vehicle or guidance and control vans, payload transporters, transporter-erectors, MGCS support trucks, emplacers, and Type I and Type II transporters.

MISSING PENNY. A deviation from prescribed safety and security standards for a nuclear reactor system or radiological activity as defined by the criteria in paragraph 12.1.3.8.

MISSION CAPABILITY. This term encompasses the purpose and functions of the space system (sensors, transponders, etc.) throughout its intended system mean mission duration (MMD, the expected life of the space vehicle).

NON-DAF CIVILIAN PERSONNEL. Persons employed by host-nation agencies, and doing work such as public works or general engineering on Air Force installations, are not Air Force employees. Their employer is the host-nation agency paying them, supervising them, and handling employee benefits. Indirect-hire employees are not the same persons as DAF civilian employees when a host government has supervisory control. This includes the host government's responsibility for insurance, compensation costs, and the like.

NONFATAL CASES WITHOUT LOST WORKDAYS. These are cases other than lost workday cases where, because of injury or occupational illness, Air Force personnel:

- Were transferred to another job.
- Required medical treatment greater than first aid.
- Lost consciousness.
- Were diagnosed as having an occupational illness.

NUCLEAR CAPABLE. A wing, group, squadron, or other designated element that does not necessarily possess nuclear weapons but has a mission to receive, store, handle, test, maintain, transport, load and unload, mate and demate, stand alert, or perform strike missions with nuclear bombs or warheads. An Explosive Ordnance Disposal (EOD) team with a nuclear mission (E-1 and E-2 units only) is a nuclear-capable unit. US custodial units supporting non-US delivery organizations are nuclear-capable units.

NUCFLASH. A reporting flagword identifying a nuclear weapon system accident which could create the risk of war. This includes accidental, unauthorized, or unexplained events meeting any of the following criteria:

- Accidental, unauthorized, or unexplained actual or possible nuclear detonation by US forces or US-supported allied forces.
- Accidental or unauthorized launch of a nuclear-armed or nuclear-capable missile by US forces or US-supported allied forces.
- Unauthorized flight or deviation from an approved flight plan by a nuclear-armed or nuclear-capable aircraft of US forces or US-supported allied forces which could be perceived as a hostile act.

NUCLEAR COMPONENTS. Weapon components composed of fissionable or fusionable materials that contribute substantially to nuclear energy release during detonation.

NUCLEAR MISHAP. A generic term used to denote a nuclear reactor system, nuclear weapon system, or radiological mishap.

NUCLEAR REACTOR SYSTEM. A nuclear reactor with any associated nuclear or nonnuclear systems.

NUCLEAR REACTOR SYSTEM ACCIDENT. An uncontrolled reactor criticality resulting in damage to the reactor core or significant release of fission products from the reactor core.

NUCLEAR REACTOR SYSTEM AND RADIOLOGICAL MISHAPS. Nuclear accidents, incidents, and deficiencies involving terrestrial nuclear reactor systems, nuclear power systems, and radioactive materials and sources.

NUCLEAR REACTOR SYSTEM INCIDENT. A nuclear reactor system mishap not meeting the criteria for an accident.

NUCLEAR REACTOR SYSTEM MISHAP. A generic term used to denote a nuclear reactor system accident or incident.

NUCLEAR REACTOR SYSTEM SAFETY DEFICIENCY. A situation, event, or condition involving a deviation from prescribed safety and security standards for a nuclear reactor system not meeting the criteria for an accident or incident.

NUCLEAR WEAPON SYSTEM. A combat delivery vehicle with its nuclear weapon or weapons and associated support equipment, noncombat delivery vehicles, facilities, and services.

NUCLEAR WEAPON SYSTEM ACCIDENT. A serious nuclear weapon system mishap involving a nuclear weapon.

NUCLEAR WEAPON SYSTEM INCIDENT. A significant or unexpected event involving nuclear weapons, nuclear warheads, or nuclear components not meeting the criteria for an accident.

NUCLEAR WEAPON SYSTEM MISHAP. Nuclear accident, incident, and safety deficiency involving nuclear weapons, nuclear weapon systems, and associated equipment and procedures.

NUCLEAR WEAPON SYSTEM SAFETY DEFICIENCY. A situation, event, or condition which could (or did) degrade nuclear surety but did not meet the criteria for an accident or incident.

OBSERVATION. Hospitalization or restriction from assigned work activities for observation or diagnosis. This is not reportable if:

- Competent medical authority provides no treatment or medication for the suspected injury or occupational illness.
- Competent medical authority finds the person could have returned to normal work without impairment or disability.

OCCUPATIONAL ILLNESS. Any abnormal physical condition or disorder, other than one resulting from an occupational injury, resulting in adverse sequelae and caused by occupational factors associated with employment. Includes all confirmed cases of acute and chronic illnesses or diseases caused by inhalation, absorption, ingestion or direct contact with suspect substances.

OFF DUTY. Air Force personnel not in an on-duty status, whether on or off an Air Force base. Personnel participating in base team sports activities or in a permissive TDY status are off duty.

ON DUTY. Air Force military and DAF civilian personnel are on duty when:

- At an installation or off-base location to perform officially assigned work. This includes activities incident to normal work activities on DoD installations, such as lunch periods, or rest breaks. (e.g. If a DAF civilian, on their own initiative, jogs during lunch periods, that activity is unrelated to eating lunch and would not be a reportable mishap.) Personnel driving to and from work place parking areas at the start and end of duty days are in an off-duty status. Injuries occurred during lunch periods, resulting from activities unrelated to eating lunch, are off-duty. Travel to and from on-base snack bars, clubs, dining halls, etc., is related to having lunch.

  NOTE 1. Lunch off the installation is an off-duty event unless the luncheon is required by the job. See paragraph 2.1.3. for injuries which are not reportable.

  NOTE 2. Injuries sustained by military members working as part-time NAF employees are reported as on-duty military mishaps, even though the members are in off-duty status.
- Being transported by DoD or commercial conveyance or private motor vehicle for the purpose of performing officially assigned work. This does not include routine travel to and from work.
- Taking part in compulsory sporting events, physical fitness training, and fitness evaluation activities, including Air Force aerobic testing and directed sports activities at Basic Military Training, Technical Training School, Airman Leadership School, NCO Academy, Squadron Officer School, other PME, and the Air Force Academy.

PERMANENT PARTIAL DISABILITY. An injury or occupational illness which, in the opinion of competent medical authority, results in permanent impairment through loss or loss of use of any part of the body. Injury and illness costs are used solely for statistical analysis purposes, not mishap classification, in these exceptional cases. The following injuries are not considered permanent partial disabilities:

- Loss of teeth.
- Loss of fingernails or toenails.
- Loss of tips of fingers or toes.
- Inguinal hernia, if repairable.
- Disfigurement.

- Sprains or strains which do not cause permanent limitation of motion.

PERMANENT TOTAL DISABILITY. Any nonfatal injury or illness which is totally incapacitating. For purposes of this instruction, any mishap resulting in injury severe enough for the individual to be comatose is a permanent total disability. Competent medical authority determines the disabled person cannot follow any gainful occupation or is medically discharged, retired, or separated. Losing the following body parts, or the use of them, in a single mishap is a permanent total disability:

- Both hands, or
- Both feet, or
- Both eyes, or
- Any combination of two of these body parts.

PINNACLE/FADED GIANT. A nuclear reactor system or radiological accident as defined by the following criteria:

- Nuclear criticality or event resulting in significant damage to the reactor core or a significant release of fission products from the reactor core.
- Release of radioactive material such that, had an individual been present for 24 hours, the individual could have received an intake five times the federal annual occupational limit.
- Exposure of an individual's whole body to 25 roentgen equivalent man (rem) or more of radiation; exposure of the eye to 75 rems or more of radiation; or exposure of the skin, feet, ankles, hands or forearms to 250 rems or more of radiation.

PROPERTY DAMAGE. Damage of $10,000 or more to facilities, equipment, or material. Report damage even if the US Government is wholly or partially reimbursed. Damage costs include all costs associated with the mishap, i.e., primary and clean-up (not environmental). The total of the Air Force and non-Air Force damages determines the reportability.

RADIOLOGICAL ACCIDENT. A loss of control over radioactive material or radiation presenting a hazard to life, health, or property.

RADIOLOGICAL INCIDENT. A radiological mishap not meeting the criteria for an accident.

RADIOLOGICAL MISHAP. A generic term used to denote a radiological accident or incident.

RADIOLOGICAL SAFETY DEFICIENCY. A situation, event, or condition involving radioactive material which could or does degrade nuclear safety, but does not meet the criteria for an accident or incident.

RECOMMENDATIONS. These are actions likely to prevent a similar mishap or reduce its effects.

★**REMOTELY PILOTED VEHICLES (RPV)**. A unmanned vehicle whose primary maneuvering control is normally provided from a source external to the vehicle itself. A RPV may be used as a target, attack, reconnaissance, ECM, or test bed carrying vehicle. Full-scale RPVs are aircraft modified to the remotely piloted configuration. Sub-scale RPVs are RPVs that are not full scale. Full scale RPVs are reported in accordance with chapter 7 while subscale RPVs are reported in accordance with chapter 8.

RPV CRITICAL PROFILE. A mission profile exceeding system limitations based on system specifications or other program documentation.

SPACE BOOSTER. A launch vehicle designed to propel or carry a space vehicle from the earth's surface or from orbit to a desired point in space. This term includes engines, rocket motors, upper stages, fuel tanks, and guidance and control sections.

SPACECRAFT. A system consisting of a space vehicle and a space booster.

SPACE HIGH ACCIDENT POTENTIAL (HAP) EVENT. An event with potential for causing a mishap. HAPs do not have reportable costs.

SPACE MISHAP. A mishap involving space systems or unique space support equipment.

SPACE SUPPORT SYSTEM. A system consisting of equipment and facilities required to process the space system. This term includes the launch pad and associated equipment, and system equipment required to check out, launch, command, control, and recover elements of the space system.

SPACE VEHICLE. A recoverable or nonrecoverable vehicle designed to orbit the earth or travel beyond the earth's atmosphere. The term includes satellites, orbiters, payloads, and sounding rockets.

SPECIAL PURPOSE VEHICLE (SPV) MISHAP. Mishap involving a special purpose vehicle (as defined in Transportation series instructions; "C", "D/M", "E", and "L" series) where the vehicle is in an operational mode and the vehicle or property damage results from collision or unsecured cargo.

TOXIC CHEMICAL AGENT MISHAPS. Any unintentional or uncontrolled release of a toxic chemical agent when:

- Property damage of $10,000 or more occurs from contamination, or similar costs are incurred for decontamination.
- Individuals exhibit physiological symptoms of agent exposure.
- The agent quantity released to the atmosphere creates serious potential for exposure. This means exceeding the applicable maximum allowable concentration time levels for exposure of unprotected workers or the general population.

TOXIC CHEMICAL AGENT. A chemical substance intended for use in military operations to kill, injure, or incapacitate personnel through its physiological effects.

TOXOID. A toxin that has been treated (commonly with formaldehyde) as to destroy its toxic property but that still retains its antigenicity, i.e., it capability of stimulating the production of antibodies and thus of producing an active immunity.

UNMANNED AERIAL VEHICLE (UAV). A powered aircraft that does not carry a human operator, uses aerodynamic forces to provide lift, can fly autonomously or be piloted remotely, is recoverable, and is intended to be recovered. An UAV is normally used for reconnaissance.

★**US AIR FORCE AIRCRAFT**. All manned vehicles, to include RPVs, supported in flight by buoyancy or dynamic action. The term includes those vehicles owned or leased by the Air Force, AFRES, or ANG. For mishap reporting purposes, nonjettisonable ancillary equipment carried by an aircraft, including equipment installed as a temporary or permanent modification, is considered part of the aircraft. Unmanned full-scale RPVs and UAVs are reported as flight-unmanned vehicle mishaps. Generally, Air Force aircraft are:

- Operated and exclusively controlled or directed by the Air Force.
- Furnished or leased by the Air Force to a non-Air Force organization when the US Government has assumed ground and flight risk.
- Assigned for the use of an Air Force liaison officer with the Civil Air Patrol (CAP).
- Any aircraft under test by the Air Force, including aircraft furnished by a contractor when operated by an Air Force aircrew.
- The term does not include:
  - •• Aircraft leased to contractors, commercial airlines, or foreign governments when the lessee has assumed risk of loss.
  - •• Aircraft loaned to other US government agencies or transferred to other governments.
  - •• Civil air carrier aircraft owned by civil operators and flying contractor air missions for the Air Force under civil operating rules or regulations.
  - •• Factory-new production aircraft not formally accepted by the Air Force.
  - •• Air Force aircraft assigned to the CAP.
  - •• Aircraft of another military service, even when they are taking part in a joint air operation controlled by the Air Force.
  - •• Air Force Aero club aircraft. Chapter 15 provides instructions for reporting Aero club mishaps.

US AIR FORCE GUIDED MISSILE. US Air Force guided missiles are:

- Owned in part or in whole by the Air Force, or
- Operationally controlled by the Air Force, or
- Furnished by the Air Force (Government Furnished Property [GFP] or Government Furnished Equipment [GFE]) or leased to a non-Air Force organization for modifications, tests, or experimental projects for the Air Force, except when the lessee has assumed risk of loss, or
- Under test by Air Force commands or agencies.

US AIR FORCE MILITARY PERSONNEL. These are:

- Air Force personnel on active duty with the Air Force.
- ANG and AFRES personnel on military duty status.
- Air Force Academy cadets.
- Reserve Officer Training Corps (ROTC) cadets engaged in directed training activities.
- Members of other US military services serving on extended active duty with the Air Force.
- Foreign-national military personnel assigned to the Air Force.

US AIR FORCE MISHAP. An unplanned event, or series of events, resulting in:

- Injury to Air Force military personnel.
- Injury to on-duty DAF civilian personnel.
- Injury to non-Air Force personnel resulting from Air Force operations.
- Occupational illness of Air Force military or DAF civilian personnel. The medical staff reports occupational illnesses through its reporting system.
- Illness of non-Air Force personnel caused by Air Force operations.
- Damage to Air Force property.
- Damage to non-Air Force property resulting from Air Force operations.
- Degradation of nuclear or radiological safety.

US AIR FORCE SPACE SYSTEMS AND SPACE SUPPORT SYSTEMS. Include systems that are:

- Owned in whole or in part or leased by the Air Force.
- Operated and controlled or directed by the Air Force.
- Furnished by the Air Force or leased to a non-Air Force organization when the Air Force has retained the risk of loss.
- Systems for which the Air Force has contractual development, contractual launch, or procurement responsibility.
- Under test by the Air Force.

★CATEGORY-AGENT-REASON (CAR) DEFINITIONS

A2.1. ACCOUNTABLE CATEGORY: A broadly defined area accountable for the agent. For off-duty ground mishaps, this area will not be specifically "accountable" but will be the overall area where the mishap occurred.

- HOME/DOMESTIC: Any causal finding resulting from activities around the home (e.g., yard work, home maintenance, falls down stairs, falls on ice).
- LOGISTICS: Any causal finding over which an ALC or PCTR has control. Includes manufacture, procurement, modification, design, or depot activities. Include the transportation unit in this category.
- MAINTENANCE: Any causal finding over which the commander for maintenance or logistics has control.
- MEDICAL: Any causal finding over which any medical commander has control.
- MISCELLANEOUS: Any causal finding resulting from other than identified above (e.g., working on automobile at the hobby shop, injured at the supermarket, slip or fall other than home or domestic arena, etc.).
- NATURAL PHENOMENA: Any causal finding resulting from extraordinary weather conditions such as blizzard, typhoon, extreme freeze, earthquake, flood, hail, lightning, tornado, or hurricane. For flight mishaps, this may include weather (extraordinary or not), night operations, and bird strikes.
- OPERATIONS: Any causal finding over which the commander for operations has control. Includes aircraft maintenance units and consolidated maintenance units in a composite or objective wing structure.
- PMV OPERATIONS: Any causal finding resulting from the operation of a private motor vehicle (includes 4 and 2 wheel vehicles, All Terrain Vehicles (ATVs), bicycles, and pedestrians).
- RECREATION: Any causal finding resulting from a sporting or recreation event (e.g., walking, jogging, dancing, hiking, baseball, softball, basketball).
- SUPPORT: Any installation level causal finding not defined by operations, maintenance, logistics, or medical. Include Civil Engineering (CE), Supply (LGS), Security Police (SP), Morale-Welfare & Recreation (MWR), etc., in this area.
- UNKNOWN: Self-explanatory.

A2.2. RESPONSIBLE AGENT: A person, item, or condition identified as responsible for the action or result.

- COMMANDER: Self-explanatory.
- CONTRACTOR: Air Force mishap is the result of the contractor (such as property damage, injuries, etc.).
- DIRECTIVES: Any written guidance or procedure affecting the activity identified as causal.
- ENVIRONMENTAL CONDITION: Condition impeding or significantly degrading the completion of the task; (e.g., temperature, wind, chill factor, heat index, darkness, lighting, animal presence, distress).
- MANAGEMENT: Those over the direct supervisory level exercising managerial control of an activity or operation.
- MATERIEL/EQUIPMENT: A part, equipment, or system identified as causal and, due to failure or improper design, fails or malfunctions.
- NON-AIR FORCE PERSON/PROPERTY: A non-Air Force person or property who performed or contributed to the performance of the activity identified as causal.
- OTHER: New agent not yet specified. If this area is used, explain in the narrative the "most likely" responsible agent.
- PERSON: An individual who performed, observed, or was accessory to the performance of the activity identified as causal.
- SUPERVISOR: An individual who was responsible and accountable for the task performance identified as causal.
- UNKNOWN: Self-explanatory.

A2.2.1. COMMAND LEVEL: The organizational level where the responsible agent was assigned and performing when the mishap occurred. Off-duty mishaps will have a specific identifier.

- AFL: Air Force at Large (includes exchange students, military members in a nonpay status while waiting for appellate review if they have no written or verbal orders to return to an Air Force installation, prior service personnel on leave before reporting to initial permanent duty assignment, etc.).
- ALC: Air Logistics Center
- BASE: Base
- CMD: Major Command
- DET: Detachment
- DoD: Department of Defense
- DRU: Direct Reporting Unit
- FLT: Flight

- FOA: Field Operating Agency
- GRP: Group
- NA: Not Applicable. Used when responsible agent is not a person and therefore has no command level or functional level.
- NAF: Numbered Air Force
- OC/LAB: Other Centers/Laboratories (Development or Flight Test Center, AF Laboratories, etc.).
- OL: Operating Location
- OTHER: If this choice is used, safety personnel must explain in the narrative what "other" means.
- PCTR: Product Center
- SQDN: Squadron
- TTC: Technical Training Center
- USAF: Air Staff, Air Force, HQ, US
- WING: Wing

A2.2.2. FUNCTIONAL AREA: The functional area where the responsible agent was assigned and performing when the mishap occurred. Off-duty mishaps will have a specific identifier for functional area.

- AC: Finance
- AMM: Acquisition/Materiel Management
- CC: COMMAND (Public Affairs (PA), Chaplain (HC), Historian (HO), Judge Advocate (JA), Safety (SE), Quality Assurance(QA))
- DE: Civil Engineering
- DO: Operations
- DP: Personnel
- IM : Administration
- LGC: Contracting
- LGK: Electronics Maintenance
- LGM: Maintenance
- LGS: Supply
- LGT: Transportation
- LGW: Munitions
- MW: MWR
- NA: Not Applicable. Used when responsible agent is not a person and therefore has no command level or functional area.
- NOAF: Non-Air Force
- PRN: Person (for most off-duty)
- SC: Computers/Communications
- SG: Surgeon General
- SP: Security Police
- SV: Services
- TNG: Training

A2.3. REASON: An underlying fact providing logical sense for the occurrence of the cause. There are four families within the REASON group: People, Parts, Paper, and Other. Parts, Paper, or Other Reasons are usually used when a People Reason cannot be identified. For off-duty mishaps, Parts, Paper, or Other Reasons may not apply.

A2.3.1. People Reasons:

- ACCEPTED RISK: Decision made to perform the mission after being aware of the potential for mishap.
- ANTHROPOMETRY: Any human physical dimension (i.e., height, weight, and build of individual).
- BACKGROUND: An identified fact or circumstance directly related to the past experience of the individual. Includes morality, character, independence, responsibility, dependability, stereotype, etc.
- COMPLACENCY: An inappropriate state of well being, overconfidence, or undermotivation resulting in a diminished level of vigilance.
- DISCIPLINE: Willful noncompliance with known and understood directives. Includes "horseplay".
- DRUGS-MEDICINE: Any substance or chemical compound, prescribed or nonprescribed, adversely affecting perception, balance, alertness, judgment, thinking ability, or coordination.

- JUDGMENT: Inappropriate assessment of information vital to decision making, prioritization, or task management.
- PATHOLOGICAL: Pre-existing physical, mental, or emotional deficiency or illness affecting performance.
- PERCEPTIONS: Misinterpretation of height, time, distance, closure, speed, disorienting stimuli, or confusing stimuli. Includes failure to see, hear, smell, feel, or taste stimuli present in sufficient magnitude and importance to elicit a reasonably expected action. Also includes unrecognized spatial disorientation not accompanied by discomfort or confusion.
- PHYSIOLOGICAL: Adverse conditions or reactions disrupting normal biological functions or processes. Examples: GLOC, hypoxia, hyperventilation, decompression sickness, evolved or trapped gas, fatigue (physical exhaustion), loss of balance, kinesthetic response to stimuli, acceleration- induced compromise and illusions, or recognized disorientation ranging from mild discomfort (i.e., the leans) to total incapacitation.
- PREPARATION: Inadequate accomplishment of planning, briefing, flight clearance, weather clearance, preflight, required pre-use inspection, TDY checklists, vehicle inspection or maintenance (on- or off-duty), technical orders not available for the task.
- PROFICIENCY: Not able to perform assigned task at acceptable level due to lack of technical skill. Individual has been adequately trained and met minimum accepted standards.
- PSYCHOLOGICAL: Attention anomalies including distraction, channelized attention, habit pattern interference, or task saturation; poor habits; insufficient aptitude or cognitive abilities; overmotivation; psychomotor coordination; personality; emotions, moods, behavior; fatigue (mental or emotional exhaustion), stress, anxiety, suffering, worry derived from task, environment, or personal situation.

A2.3.2. Parts Reasons:

- ACQUISITION: Equipment acquired with known design deficiencies or from a supplier unable to meet specifications or supply requirements.
- ATTRITION: Decision previously made to replace by attrition in lieu of issuing a time compliance technical order (TCTO) or retrofit package.
- DESIGN: Systems or components are inadequately designed or were built to inadequate specifications or requirements.
- FAULTY-PART: Part or personal equipment (life support items, tools, equipment designed for use by the individual) failing prior to reaching designed life time or functioning incorrectly.
- MODIFICATION: Deficiencies in classification, prioritization, funding, or scheduling.
- OTHER: New category not yet specified. If this area is used, explain in the narrative the "most likely" parts reasons.
- UNAUTHORIZED MODIFICATION: Modifications made contrary to manufacturer's recommendations (i.e., an individual modifies a vehicle suspension system against the manufacturer's recommendation).
- DESIGN: Systems or components are inadequately designed or were built to inadequate specifications or requirements.

A2.3.3. Paper Reasons:

- INADEQUATE RISK ASSESSMENT: Decision made to perform the mission without adequately investigating or examining the mishap potential.
- PUBLICATIONS: Inadequate or misleading technical data, procedures, instructions, or directives.
- TRAINING: Inadequate, inappropriate, or no training standards for the mission or work element attempted.

A2.3.4. Other Reasons:

- ANIMAL: Collision, damage, ingestion of an animal.
- MANNING: Insufficient authorized or assigned personnel to accomplish unit tasking; insufficient critical skill levels or experience in unit.
- OTHER: New reason.
- UNKNOWN: Specific reason could not be identified.
- WEATHER: Weather condition identified as causal.